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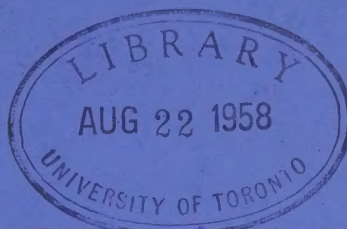
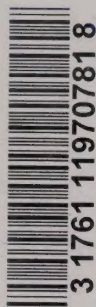
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REPORTERS  
LDG., TORONTO

Inquiry Commission, 1922-1924

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HYDRO ELECTRIC ENQUIRY COMMISSION

## QUEENSTON - CHIPPAWA

Estimates and Appropriations

ONTARIO POWER COMPANY

Costs, Third Pipe Line Construction

TORONTO, APRIL 5TH, 1923.

W. C. Coe,  
Official Reporter





HYDRO - ELECTRIC INQUIRY COMMISSION.

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HYDRO - ELECTRIC INQUIRY COMMISSION.

TORONTO, APRIL 5th, 1923.

P r e s e n t :

W. D. GREGORY, ESQ., CHAIRMAN.

M. J. HANEY, ESQ., COMMISSIONER.

R. A. ROSS, ESQ., COMMISSIONER.

J. .A ROSS, ESQ., COMMISSIONER.

J. H. W. BOWER, ESQ., SECRETARY.

-----  
Q U E E N S T O N - C H I P P A W A .  
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ESTIMATES AND APPROPRIATIONS.

O N T A R I O P O W E R C O M P A N Y .  
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COSTS, THIRD PIPE LINE CONSTRUCTION.  
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HON. N. .W. ROWELL, K.C., Counsel for the Commission.

J. B. ALLEN, Esq.

-----  
HON. I. B. LUCAS, ESQ., K.C.

F. A. GABY, ESQ., Chief Engineer.

W. W. POPE, ESQ., K.C., Secretary of the Hydro Commission,  
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F. A. GABY, Recalled. Examined by HON. MR. ROWELL :

Q--Mr.Gaby, I think last night when the Commission adjourned I was asking you about the details of the estimate that you had before you during the period of construction with which you might be able to make a comparison from time to time as you received your monthly reports of actual progress and costs, and I understood you to say that this detailed summary appearing in Exhibit No. 16, which is the general report submitted to the Board in April 1918, related





to a comparison of steam and electric shovel work ?

A--Yes.

Q--I thought you were in error at the time, but I wanted to read the report in order to see; now I just want to draw your attention to the report and see if you still think it is so limited.

I see in the Appendix to the report, at page 9, under the heading "Capital cost," these words :

" As regards estimates of capital cost, it is to be noted that the tremendous advance which has taken place during the period of the war in the cost of labour and material has necessitated a very material increase in all estimates made during the pre-war period. Fortunately, for reasons hereunder explained, this statement does not hold for the two main items of cost in connection with the scheme as a whole; namely, the cost of earth and rock excavation in the canal. Lacking definite knowledge, at the time, as to the extent to which the cost of rock and earth excavation in the canal would be affected by the use of the electric driven plant of large capacity, and in order to be on the safe side, all the earlier estimates of cost in connection with the canal work were figured on the basis of unit costs for earth and rock excavation which would obtain if the ordinary type of steam driven excavation plant were used. On the basis of this assumption a net unit cost of 30 cents per cubic yard of earth and \$1 per cubic yard for rock, was used in all preliminary estimates."

.You recall that ? A--Yes.

Q--Then the report goes on to state :

" Owing to the fact that the construction plant has been purchased, and that construction work is now under





"way, it has recently been possible to compile an estimate of the unit cost of earth and rock excavation which is based on the actual installed cost of the construction plant, the actual existing rates for skilled and common labour, and a reasonably accurate knowledge of working conditions.

A detailed discussion and analysis of the cost of operating this plant, with corresponding costs per cubic yard of excavation is set forth in Appendix 7."

That is the Appendix to which I referred ? A--Yes.

Q--Now, in view of that, do you say that is not the detail based on your actual experience ?

A--I would not say that; that is details of experience as we had obtained at that date; as a matter of fact, these details are worked out on the experience of contractors in their dredging operations in connection with the Chicago Ship Canal, as far as the operation of their equipment is concerned, and based upon the best judgment as to what would obtain from the operation of electric shovels. It was primarily an investigation, as I stated before, of the old type and the new type of equipment, which I considered would be of higher efficiency, and would give better results. It incorporated, naturally, as far as the operation was concerned, our having certain details as to conditions of operations before us when we prepared those estimates on the earth and rock basis, and those conditions are stated in Exhibit No. 7.

Q--I will read it again :

" Owing to the fact that the construction plant has been purchased, and that construction work is now under way, it has recently been possible to compile and estimate of the unit cost of earth and rock excavation which is based on the actual installed





"cost of the construction plant, the actual existing rates for skilled and common labour, and a reasonably accurate knowledge of working conditions."

And further down :

"The final figure for the net unit cost of earth and rock excavation as indicated by the above analysis may be considered as authoritative, and the safe basis upon which they have been derived is indicated by consideration of the following facts."

Then there is a discussion as to the working days, output, disposal costs, overhead, etc.,

Then I refer to page No. 11 :

" Eighty Six per cent of the cost of all track and overhead construction has been charged direct into the unit cost of earth and rock, leaving a salvage value which is less than the ordinary market value of the reclaimable material entering into this portion of the construction.

In addition to a final 25% allowance for engineering and contingencies, a liberal allowance for administration and other overhead charges has been previously included in the individual items of the cost analysis.

The final result of this analysis is to show that earth and rock can be taken out for a net unit cost of 26.6¢ per yard and 97.3¢ per yard respectively, as against the unit prices of 30¢ per yard and \$1.00 per yard used in the original estimates.

It becomes evident therefore that by reason of the greatly increased efficiency of the plant to be used, as compared with ordinary construction plant, and the cheapness of electric power as compared





"with steam generated power, it will be possible to take earth and rock out of the canal at the present time as cheaply as it could have been taken out with the ordinary type of steam driven plant under pre-war conditions."

And it goes on to explain the matter in still greater detail.

Now, Mr. Gaby, if we turn to the Appendix referred to in this report we find a most complete analysis of the different elements that enter into the making up of your unit cost for doing the work, and at the conclusion of this detailed analysis of the different elements that go into the making up of this unit cost of earth and rock excavation, there is a summary to which I referred yesterday.

COMMISSIONER R.A. ROSS: What is the date ?

A--Between June and November of 1917.

HON. MR. ROWELL: It was presented to the Board on April 18th 1918. And, according to Mr. Gaby, that is the only report presented to the Board on the matter -- according to the Minutes ? A--Yes.

Q--It is correct that you have in Appendix 7 a detailed analysis of how you arrived at the unit cost for earth and rock, based on what the report states to be your actual experience up to that time ?

A--Yes, this detailed analysis was to guide us in arriving at the unit cost, which was done in preparation of these estimates dated November 27th, amounting to 27¢ for earth, and 98¢ per cubic yard for rock. These unit prices were arrived at <sup>on</sup> the basis of our best judgment. That was, primarily, an analysis of the two propositions, we had 37¢ for earth, and \$1 something for rock, in the estimates that were prepared at the same time, or approximately the same time, and published about the same date, that is,





instead of \$24,000,000 for the 300,000 H.P., we got \$29,000,000.

Q--That is with reference to the Douglas report ?

A--Yes, the Douglas report; the figures were 38.5 and 1.71, based on the experience of contractors at that date who were using the ordinary type of steam driven equipment; \$29,000,000 was the estimate on that basis.

Q--Having the ordinary basis, as you say, based on data of other contractors who were using ordinary shovels, the estimate amounted to \$29,000,000 ? A--Yes.

Q--You reached that conclusion, based on your own experience?

A--Not on our experience, on our own judgment as to what we might expect from the operation of electric shovels which had been purchased by the Commission, we arrived at the conclusion of 27¢ per cubic yard for earth, and 98¢ for rock,

Q--I just want to come back -- so that we can hurry on, Mr.Gaby, I want to get this information from you: You did have before you the data, so far as this estimate was concerned, whereby you were able to make a comparison from month to month, as you received your reports of the actual cost, whereby you, as engineer in charge of the work, and knowing all the factors, would be able to judge whether the actual cost was exceeding the estimate or not ?

A--As soon as the various parts of equipment as a whole got into operation, yes, but until those various parts of the equipment did get into operation, no. We could only tell as near as possible with regard to the respective items that were in operation at the time; for instance, you start in with the construction of your auxiliary equipment, such as plant for operation, your railway, and all elements that enter into the construction work, and it takes from two to four years to get that plant into a maximum condition of operation. All that preparatory work should be done





before starting excavation, and when you start making excavation you have to make the best estimate you can of the items of preliminary work that enter into the cost per cubic yard, with that equipment. Now, these estimates were all based on the estimated output over a given period of time for certain shovels that we would use, based on a certain schedule of operations over a number of years, having regard to conditions under which we were operating at the time, and until we got the shovels in rock, we were not in a position to determine the actual cost.

Q--As far as that is concerned, the determination of the cost was estimated, as to the rock. Now, I do not want to prolong it, we have reports that speak for themselves, but take the earth excavation, when you commenced to get your returns from month to month of the actual cost of the earth excavation, and the different elements that went into it, with that report before you, would you, or not, be able to form an opinion as to whether the actual cost of doing the work as reported was exceeding the estimate or not? A--Answering the first part of your question, the actual cost of the various items in units was not available, only direct items chargeable to excavation were available as to actual cost; all the other items, which I pointed out yesterday, and which were the large items with regard to excavation of material, in cubic yards, were estimated. We assumed what proportion of the railway, plant, and overhead entered into the cost, as well as we could. Our assumptions may have been right, or wrong. We could make a relative check; as a matter of fact, in 1918, and the early part of 1919, our excavation, as we estimated, was very close to the thirty cents per yard. We had done very little work by the end of 1919,



approximately ten per cent of the work was done. We did not get any real record of rock operations until May, 1921, to enable us to check what the costs would be as far as rock is concerned.

Q--You were able to check the earth excavation ?

A--In that way, as an estimate based on our judgment, we did check the earth excavation, yes.

Q--And when you got into the rock, you were able to check the rock excavation ? A--We checked the rock, yes.

Q--You did have data which enabled the engineers, when the different portions of the work were actually undertaken, to check the actual cost as compared with the estimated cost on these same items ? A--On the assumption of the estimates of the future progress of what the operations would be -- we determined it on that basis, yes; from time to time we could prepare estimates as to what the ultimate cost of the work would be.

Q--Did you have corresponding details with regard to the Stuart & Kerbaugh report ? A--Yes.

Q--You were able, in the same way, to check ? A--No, we didn't have corresponding details, in this sense -- what we did have in the Stuart & Kerbaugh report was our actual costs and estimates as to the future progress which we had up to the date at which they prepared their estimate. For instance, estimates were based on May and June, and probably the cost records we had to August, 1920, because we had, during May and July, a strike and there were no operations to give us the information. Stuart & Kerbaugh took our actual records of the performance of the past, and estimated on the schedule of operations for the future, as to what these shovels would do on that basis,





and they knew the actual cost of labour and material, overhead, and other details, such as transportation, as well as having the information we had gathered as to the future. With that information before them they made their estimate of unit prices for carrying on the work.

Q--In their report they state it is based on the costs you gave them? A--On the actual cost taken from the records as we had in detail before the Commission yesterday.

Q--Their estimate, whether right or wrong, was based on the figures of the actual cost up to that time? A--They were based on the records of the Commission, yes.

Q--And the records of the Commission contain<sup>ed</sup> the actual cost up to that time. That estimate, as finally given us, was on the basis of the Rush schedule to complete the work on the 1st of September? A--No, the 1st of November, that was their estimate, and they stated in their report that if we did certain things we probably could get through, by spending additional money on dredging equipment, by September 1st.

Q--If you made the limited additional expenditure recommended in the report, you could complete the work by September 1st, on the figures mentioned? A--That was their estimate, yes.

Q--That was yours? A--We did not dispute it.

Q--You said it would take three or four months to make the estimate that way, and it took less than a month?

A--They had available before them all the information that had been compiled by the engineers in connection with the preparing of the estimates, from May or June of 1921, the cost of construction had been segregated and combined, and was ready for their information. A great deal of





detail work in preparing the estimates had already been done by the Commission, and was available for their use.

Q--They checked it all over with you. Mr. Acres told us he checked it over with them, and that he agreed with their calculations.

COMMISSIONER R.A.ROSS: In the document you have before you, Mr. Gaby, you state it is only shovel costs that are compared; does that include drilling and blasting, and so on? A--It includes practically everything as we estimated we would operate.

Q--In other words, taking out the whole prism?

A--It starts out with the shovel costs themselves as a comparative proposition, then deals with construction work, dump expenses, etc., and then we try to estimate as near as we can.

Q--Your actual cost included taking out the prism?

A--Yes, as near as we could estimate. For instance, under the heading of shovels, locomotives, cars, tracks, dump overhead, etc., we arrive at the figure of 26.6, and engineers contingencies 6.65, or a total of 33.25 per cubic yard.

COMMISSIONER HANEY: Do your monthly estimates show these items?

A--Not in that form, they show it in different detail; for instance, excavation, direct labour and material, and transportation. That is the form of the monthly estimate, they start out with a comparison of various items.

Q--In connection with the earth excavation does it include the total cost of earth excavation after proper allowance for plant and management, the same as if it was being done on a contracting basis?

A--Each shovel had its own operation.

Q--I will have an opportunity of looking it over in detail, but I want the monthly estimate on a schedule basis



according to the item that would be specified in the operation of the whole work. A--It is summarized; there is no total cost of the earth excavation.

Q--That is not exactly what I refer to, Mr. Gaby, you have a schedule of the earth, rock, concrete, and different items on your monthly estimate, and I assume that estimate would show the unit cost of each one of those items, and the summary would be the total ?

A--Yes, that is what we did here, for the previous month to date, and the three different columns are shown to June 23rd.

HON. MR. ROWELL: Then, Mr. Gaby, look at the Stuart & Kerbaugh report as printed in Exhibit 49 on page 87; I notice they say :

" With the aid of your staff and based on the cost data of the work, we estimate the cost to complete the power canal and installation of five (5) Hydro-Electric units --" and so on. Then they give the details ? A--Yes.

Q--Now, you will notice in that report it states :

" In the above estimate we have generally figured on basic prices of earth excavation 70¢ per cubic yard; rock excavation \$2.70 per cu. yard; plain concrete \$14.50 per cubic yard; and reinforced concrete \$25 per cubic yard."

Now, at this time, in September 1921, you had found that your actual cost of earth excavation was 70¢ per cubic yard as compared with your original estimate of 27¢ ?

A--27¢.

Q--And you found that your actual cost of rock excavation was \$2.70 per cubic yard, as compared with the original estimate of 97¢ ? A--98¢.

Q--Then you had, when you started in on your work





for the year 1921 these estimated unit prices before you ?

A--Yes.

Q--For the purpose of making a comparison during the year 1921, you got in your reports from time to time from the field of operations ? A--Yes.

Q--Now, I notice in this item, and I want to get your explanation before we pass from it, with regard to what you said the other day, that there had been omitted from the Stuart & Kerbaugh estimate certain interest, and I want to draw your attention to the statement that appears on page 87 :

" Total expenditure to end of August, 1920, is \$23,268,067.93. Of this total \$10,995,646 is shown above as being the actual total cost to August 26th 1920, of the permanent work done on the project. This cost carries its full proportion of charges including interest, plant, depreciation and general overhead."

A--That is quite true.

As a matter of fact, in view of the fact they did not have any knowledge -- which is shown in Mr. Clarkson's report delivered to the Premier in the Fall of 1921 or Spring of 1922 -- it shows that there was a balance of interest of approximately \$889,000 that had not been taken into account. That was ascertained accidentally, it was not in the records of the Commission at the time, and which interest had been deferred. As far as the Stuart & Kerbaugh report is concerned, they included interest up to the time they prepared the report. The interest I referred to as being left out, was interest on \$23,000,000, which would be chargeable to the work for the future.

Q-- Let me ask you this, did he not make up his estimate of the cost as given in this statement ?





A--Do you mean the unit cost, or total cost ?

Q--The remaining cost ? A--Yes.

Q--Did he not include what he understood -- he may have been mistaken,-- was the interest that would be chargeable to the balance ? A--No, his own explanation of it, before the Public Accounts Committee, was that he included current interest, the same as any contractor would, for the moneys that would be necessary to carry on that work for the current year, but he did not include the interest on expenditures that had gone before, because he considered that a financing item. He did include interest already charged on the books of the Commission against the Niagara Development job. That was his own explanation which he gave to the Public Accounts Committee in 1922.

Q--Was there any explanation accompanying his report, either by Stuart & Kerbaugh themselves, or by you as Chief Engineer, when it was presented to the Commission, or the Government, at the time ? A--As a matter of fact, I had not seen the report at that time, when it was presented to the Government it was presented by the engineers in October of 1920, to the Premier, and I had not, up to that time, seen it, or been in a position to analyze it.

Q--The Premier told us he never saw the Stuart-Kerbaugh report until it was sent by you in the month of January 1921, when it was sent by you or the Secretary of the Commission.

A--In 1920, the Stuart & Kerbaugh report, along with the reports of the other engineers, was submitted at a conference held in Niagara Falls, and discussed in detail as to the costs. The Premier was present at that conference, and he asked for copies of those reports to be forwarded to him at the earliest possible moment. When all these reports were in there was a compilation made, and forwarded on January 21st 1921.



THE CHAIRMAN: I think the Cooper report was considered before the Stuart & Kerbaugh report ?

A--It was, it was in the hands of the committee in August of 1920.

Q--Do you understand it was the one considered at the meeting at Niagara ? A--No, all the reports were there--Cooper, Stuart & Kerbaugh, Lea, and Johnson.

Q--Is that the time when the engineers were there themselves?

A--I do not know whether Stuart was there at the time, but Johnson, Lea and the other engineers were there at that time. But the reports were sent in on September 30, 1920.

HON. MR. ROWELL: Any reports that were delivered to the Government were delivered pursuant to your letter of January 1921 ? A--They were got<sup>out</sup>/immediately after the October meeting, and as soon as we could get them in shape they were delivered to the Government, in January 1921.

Q--My recollection, Mr. Gaby, and I speak subject to correction, is that there was correspondence in connection with those reports as late as December 1920.

COMMISSIONER HANEY: 1921 ?

HON. MR. ROWELL: 1920.

WITNESS: I think there are two volumes of them, I can get the Exhibit.

Q--It is not worth the time, as I want to get ahead, but you can check up the dates.

I notice in the data here there is a report from Lea dated Oct. 26th 1920, but the date is not on the printed copy, and I am speaking from recollection of my impression of the original Exhibit.

THE CHAIRMAN: Here is a letter from Mr. Lea dated Dec. 7th, on page 93.

HON. MR. ROWELL: Yes, that is no doubt the letter I referred to.





WITNESS: Yes.

Q--Some of these reports were not in your possession at the time of the conference at Niagara ?

A--As far as the Lea report is concerned, it may not have been; he made a special report in connection with the levels of Grassie's Pool -- but the other reports were there.

Q--Just one further question on the Stuart & Kerbaugh report: I notice in reference to the date of the completion, this item:

" In reply to your inquiry as to possibility of generating current Sept. 1st, 1921, we find that with the plant provided and proposed for completion Nov. 1st, 1921, and a further addition of 21" hydraulic Dredge Unit to begin work by or before January 1st, 1921, it is feasible to generate power by Sept. 1st, 1921."

Did you purchase that particular Dredge Unit ?

A--We rented a Dredge Unit of the character recommended by Stuart & Kerbaugh.

Q--Was it your view at that time that you could complete the work by Sept. 1st, 1921, on the basis of this estimate, plus the additional cost of the dredge ?

A--Yes, with the estimated schedules, with the different units of the equipment as near as we could.

Q--Therefore, this estimate did include any expenditure that you, at that time, thought necessary to complete the work by Sept. 1st, 1921 ? A--Not to complete the work; for the operation of one unit, as near as we could possibly estimate.

Q--Did it cover what you, at that time, thought would enable you to complete the rush schedule ?

A--With the estimates we had before us.

Q--I find in this file that was produced yesterday





quite a number of memos, including the memorandum of Oct. 7th, 1921, and I notice endorsed on many of the memorandums, "Submitted to the Commission." Also the date it was submitted is stamped on the face of the memorandum. What was the object of having those stamps put on the reports ?

A--I really cannot tell you, I do not know why they were put on, or the reason for it.

Q--That is your file ? A--It belonged to the Commission, it is not my personal file.

Q--I do not mean your personal file -- everything belongs to the Commission. I mean the file which you kept, or is it kept by the Filing Clerk ? A--It is kept by the Filing Clerk.

Q--Apparently somebody stamps on the face of all the documents, "Submitted to the Commission," and the date ?

A--I do not know the reason why, or whether that would cover all those or not.

Q--I notice there is nothing stamped on the face of the memorandum of Oct. 7th 1921.

A--Here is another one dated Oct. 12th, submitted to the Commission, which would be passed by the Commission, and there is no stamp on it.

Q--Yes, it has a stamp on it ? A--Yes, pardon me.

Q--Now, you come to July, and here is a memorandum stamped, "Submitted to the Commission." A--Here is one that is not stamped. I think you will find that the red copies are the only ones that are stamped in that way; the original copies, which would be in the hands of the Chairman at the time, or the Commissioners, would not be stamped in that way.

Q--Where are the red copies of those that were stamped at that time ? A--I really cannot tell you where they are.

Q--There are none in this file ?

A--I can't say; they may be in some other file, or may be



it was the only copy the Filing Clerk had.

Q--If you have any copy of the report of Oct. 7th 1921 which bears that stamp on its face, "Submitted to the Commission," and the date, I will be glad to see it.

A--I shall have to look it up.

Q--Upon looking through this file, the natural conclusion, whether it is correct or not would be that the documents in this file that are stamped on their face, as having been submitted to the Commission, were in fact, submitted to the Commission, and that those not stamped were not submitted to the Commission? A--No, I know these others were -- there are a number of other documents that were submitted, as far as my knowledge is concerned.

Q--Col. Carmichael says No.

A--That may be his memory.

Q--I just want what the record shows, and, speaking frankly, that is the reason I asked for the file to see what your own records did show? A--There are quite a number of memorandums which were submitted, and you will find in the Commission's notes that there is reference to memorandums that have not that stamp on them.

Q--I have not yet found them. We have the evidence that this particular memorandum has never been submitted to the Commission, and can find no record in the Minutes of the Commission that the memorandum was submitted to the Commission, and one of the Commissioners has told us that, according to his recollection, it was not submitted to the Commission? A--You will also find memorandums in

that file that are not stamped in that way, but are referred to in the Minutes of the Commission.

Q--That may be, I do not know of any.

A--I am telling you that is the fact.

Q--Let us look at the report of October 7th 1921, and





I will ask you one or two questions about it. I see in this report it gives a summary of the increased cost due to the rush schedule, amounting to \$6,795,000 ?

A--Yes.

Q--Now, does that represent in your opinion, the increase over the Stuart & Kerbaugh estimate due to adopting September 1st as the date of completion ?

A--As is stated in the memorandum, that was the opinion at that time, as distributed by the engineers on the job, reported by the construction engineers to me, and so submitted to the Commission. Now, as to any other distribution of the various items there, that was referred to Messrs. Stuart & Kerbaugh for a report to the Commission. As to the reason for the over-run, and those details from which that report was compiled, they were submitted to Mr. Stuart, and, in his judgment, the excess labour, and other charges, were attributable to other causes -- the causes which he states in his report.

Q--What I want to get, Mr. Gaby, is your information, and the information of the staff, upon which you made the report of Oct. 7th 1921, to Sir Adam Beck-- whether it states on the face it was presented to the Commission or not -- in which you make this statement :

" The construction staff report that the increased cost of construction over the estimates submitted to the Government for moneys required for the Queenston-Chippawa Development is chargeable : directly and indirectly to the necessity for operating under the rush schedule which obtained to the end of July, 1921."

Then you set out the various causes in detail, and this paragraph appears :

" In the matter of double shift, the economies





"realized during the month of August on the single shift basis indicated that in spite of the utmost efforts in the matter of supervision and organization the night shift operations had not been able to deliver the same results as the day shifts."

Is that your own view ? A--That is my view.

Q--"As an illustration of this, in the month of August last the working force was reduced from 8,000 to 3,000 men; direct labour costs dropped approximately 37%, and the average rock production per shift increased about 26%."

That is correct ? A--Yes.

Q--"These economies were obtained while the work was not fully systemized under the new working conditions and while the wage reduction only applied to 70% of the working days of that month."

That is right ? A--Yes.

Q--You say, "Wholesale dismissals during the night shift on account of <sup>mis</sup>/demeanours in connection with the illicit traffic caused a large expenditure in operation and consequent disruption in organization.

If the reorganization had taken place on February 1st instead of August last, the estimated saving in labour costs alone would have been \$3,418,000."

A--Yes.

Q--Is that your own view ? A--If we had had more efficient conditions, as obtained in August, due to the reorganization at that time, that is, keeping out the night shift, and operating the day shift, we would then have saved on the estimate \$3,418,000.

(Page 4865 follows)



Q--Do you say that was your honest information at that time ? A--As I stated in the beginning of the report that is a report submitted to me, and I handed it on to the Commission as the report of the engineers in the field. It did not state it was my judgment at all. I was at that time endeavouring to get the best judgment possible, and we were still working on the problem of trying to arrive at the reasons for the increased cost, when even that report was made and had been worked on for some months.

Q--What I ask/<sup>ed</sup>you in reference to two or three of these items was if it represented your view ?

A--Yes, as far as the items are concerned I agree with them.

Q--What I want to get is how far this report represented your view at that time; you say on August 31st the value of machinery and buildings was \$2,582,000 ?

A--As far as a the lumber or as far as the schedule was concerned we were not speaking of the normal schedule we had anticipated in the year 1920, and that was due to conditions over which we had no control such as failures of the concrete lining plant, failures in the shovels to operate, and in that way our schedules were disorganized and we found it necessary to put in additional equipment and additional plant to take care of these schedules.

Q--Did you establish a new schedule ? A--When ?

Q--After the Stuart & Kerbaugh report ? A--That was disorganized and that is what we referred to, the disorganization during the spring of 1920 and 1921 due to the failure of equipment and due to the character of rock -- the failure of equipment to meet the schedules we had anticipated.





Q-- How about this: "About eight miles of extra track was necessary for the proper walls to be placed behind", is that correct? A-- I will answer you, Mr. Rowell, if you will wait a minute, I will give you the proper answer, you cannot answer these by yes or no.

Q-- Mr. Gaby please listen to my question, you can tell me whether that represented your view at that time or not.

A-- I am not going to give you yes or no, I am going to explain it. That rush schedule referring to the eight miles of track was due to the failure of the concrete lining equipment and of our having to reconstruct the lining equipment, and having the delay before we could again get into operation. It was due to the failure of the steam shovels which were operating in close proximity to the electric shovels, the result was we had to change the tracks and put in eight miles of additional track at an expenditure of nearly half a million dollars and that was to meet the conditions as they obtained.

THE CHAIRMAN: Mr. Rowell asked if that was your opinion at the time; was it your opinion or not?

A-- I do not want you Mr. Gregory to have any false impressions that this rush schedule is the same as the rush schedule referred to in Messrs. Stuart and Kerbaugh's report. I am trying to explain so that there will be no misunderstanding between the rush schedule in Stuart and Kerbaugh's report and the rush schedule in that report; I do not intend that it should go out without explanation.

HON. MR. ROWELL: I do intend you to answer straight questions fairly, and not evade them.

A-- I will answer fairly, and that is what I intend to do; you do not need to make such remarks as that.

Q-- As long as you do that it will be all right.

A-- I am trying to do it, but I am not going to answer unless





I can explain the proposition.

Q--Then that statement fairly represented your view at that time? A-- With the qualifications given, yes.

THE CHAIRMAN: In what way do you qualify?

A--I qualify by saying that the rush schedule was the schedule maintained due to the exigencies we had to meet on account of the breaking down of shovels and concrete lining equipment.

COMMISSIONER R. A. ROSS: Your contention is you had a double rush schedule? A-- Yes, caused by things not anticipated in the rush schedule set out in Stuart and Kerbaugh's report.

THE CHAIRMAN: The statement you are reading from is one made by Mr. Kerbaugh.

HON. MR. ROWELL: October 7th, 1921 memorandum to Sir Adam Beck explaining why the estimate of \$55,000,000 was being exceeded.

THE CHAIRMAN: Who signs that?

HON. MR. ROWELL: Mr. Gaby.

THE WITNESS: I signed it, but stated it was a report from the engineers of the Commission on the job and I was merely transmitting it to the Commission.

HON. MR. ROWELL: The report speaks for itself

A-- Yes, and you are asking certain questions which I am answering.

Q-- You say the report is a summary of the increased cost due to the rush schedule, and this summary totals \$6,795,000; did that represent your view at that time?

A-- As what ?

Q-- As exactly what it states?

A-- No, it was a compilation of various statements as to various views, that represented a compilation of various items and appeared with explanations.



Q-- Was that your view at the time that was presented, that was <sup>a</sup> correct statement? A-- For what?

Q-- For the purpose for which it is stated in the report?

A-- What is the report?

Q-- The report speaks for itself, I do not want to define it. A-- You mean was that my judgment now?

Q-- Then. A-- No, I had not finally completed my report in connection with the investigations.

Q-- Did you differ from this at the time you presented it?

A-- No, I had no reason to differ; I hadn't the information to my own satisfaction to differ from it.

Q-- Have you got the reports upon which this is based?

A-- The detailed reports, no, they are looking them up in the files.

THE CHAIRMAN: Who reported to you?

A-- Either Mr. Acres or Mr. Herron, either one of these two gentlemen would report at that time.

Q-- You will have these reports and we can deal with them and we can deal with them when we come to the question of costs.

A-- As a matter of fact that was delivered to the Premier at the time the information was given us, an <sup>interim</sup> interim report, and a further report would be made at a later date; that was October 12th when the information was given.

Q-- Both the Premier and Mr. Carmichael say they never saw this report until you produced it the other day?

A-- I gave them the information out of the report in detail and answered a great many questions in connection with it.

Q-- Now, what other ones are you ready to deal with on that list? A-- Number six; here is number 6 detail.

THE CHAIRMAN: Mr. Gaby, was this report of October 7th submitted to Mr. Francis? A-- I didn't know it was in the files. I don't know whether he saw it or not. We had not





submitted it as our estimate as that was only an interim estimate and the final estimate was made in February of the \$65,000,000 or \$68,000,000 and sent to the Premier in which we made a comparison of this interim report made at that time.

Q-- Has Mr. Francois seen the Adres or Herron report?

A-- I presume he has, personally, I do not know.

Q-- Just before dealing with this, I omitted to mention, I noticed in this same file is another report, this memorandum to Sir Adam Beck dated October 10th, 1920, a comparison of estimates of the Queenston-Chippawa development. It is not stamped over as having been submitted to the Commission; you recall that memorandum of October 10th?

A-- I do not recall it, but if I could see what it is I could say (Witness looks at report). Yes, that gives a comparison between the earth estimate and the cost of constructing the Queenston portion for providing sixty-five hundred second feet?

A-- Yes, that I believe is my own report.

Q-- Do you remember or did you prepare the data at that time upon which you made that report? A-- Yes.

Q-- Have you got that? A-- No, I haven't, I can get it.

EXHIBIT NO. 55 : Filed by Hon. : Report of  
: Mr. Rowell : Mr. Gaby.  
: April 5, 1923 :

Q-- You now produce to me a statement showing the amount expended on plant construction during each year commencing 1917 to 1921 inclusive? A-- Yes.

Q-- Making up a total of \$17,441,752.35? A-- Yes.

EXHIBIT NO. 56 : Filed by Hon. : Statement showing  
: Mr. Rowell : expenditures 1917  
: April 5, 1923 : to 1921 inclusive.

Q-- Have you anything further? A-- The others are in preparation, and I wish to have an opportunity to go over



them myself in detail.

HON. MR. ROWELL: I think, Mr. Chairman, that is as far as we can go on the present matters at the present time, and the balance of Mr. Gaby's testimony on this particular branch should come in when we investigate "costs". It would not be necessary to resume at the present time, unless the Commission desires it on this particular branch.

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(At a later stage) :

HON. MR. ROWELL: Mr. Gaby, you stated you had something in answer to item No. 1, some plan, can you leave that with us ? A--Yes, here it is. It is a blueprint No. B-1-10-172-D, showing a comparison of quantities, and comparison of costs, between the actual and the estimated quantities to complete the work as of May 31st, 1921, which was prepared some time in September, the blueprint being dated Oct. 2nd 1921. That gives a comparison between the Stuart & Herbaugh estimate, and the actual quantities and costs of our work on the canal, only it does not include anything for "Overheads," but does include "Power houses and equipment."

<u>EXHIBIT NO. 59:</u>	Filed by	: Blueprint showing comparison
	: Hon. Mr. Rowell	: of quantities and costs
	: April 5,	: to May 31st, 1921.
	: 1923.	:

Q--Who prepared this blueprint, Mr. Gaby ?

A--It was prepared by the staff of the Commission.

Q--Did this form part of any report which you were making on the matter ? A--The information contained there may, or may not, have been used by myself in preparing that report of the Commission of Oct. 7th in reference to the \$66,000,000 of cost of the Queenston-Chippawa Development.

Q--And have you all the data upon which you compiled this Exhibit ? A--Yes, it is all available in detail.

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ONTARIO POWER COMPANY.

Costs, Third Pipe Line Construction.

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HON. MR. ROWELL : Then, Mr. Gaby, I would like to take up a further matter, the Ontario Power Addition, in reference to the estimates and costs of the new pipe line. You have had a copy of Mr. Francis' report on this matter, Mr. Gaby ? A--Yes.

Q--Does Mr. Francis' report correctly set forth the information you and your staff <sup>had</sup>/furnished him in reference to this particular matter ? A--As far as I have been able to gather, yes.

Q--Then, I may use this report as a basis for any questions I may wish to ask you ? A--Yes.

Q--Now, I notice in the report -- let me first ask this : I see by the report that the work in question -- perhaps you might just describe, Mr. Gaby, as briefly as you can, the character of this new work; tell the Commission what it was; what do you mean by it ? A--The third pipe line.

Q--I understand it included the installation of two additional units in the power house ? A--The physical explanation of the work is that it was the construction from the intake of a wood stave pipe line placed in an excavation of approximately 13.6 feet in diameter, and approximately 6,000 feet in length to the distributors immediately above the power house of the Ontario Power Company, and provided for the additional steel surge tank, two additional penstocks and valves connecting thereto, the installation of two generators, substructure and superstructure of the power house with such



electrical equipment apertaining thereto; that is a very general description.

Q-- What additional amounts of power did this development give you? A-- Depending on conditions, anywhere from forty to fifty thousand horse power additional.

Q-- When did you commence working on this addition?

A-- In the early part of eighteen or December seventeen.

THE CHAIRMAN: How was that additional report of fifty thousand made up? A-- We installed two generators for a capacity of between eighteen and twenty thousand horse power and the additional efficiency in the transportation of water as far as the other units are concerned.

Q-- These connected with the other units? A-- Yes.

Q-- It was not used exclusively between these two?

A-- No, it was an inter-connection between pipe lines one and two.

Q-- When the two units were running to their limit, was there any other water available for use on the others?

A-- I would say probably a little, not a great deal; the pipe line would carry forty thousand horse power.

HON. MR. ROWELL: As the capacity was eighteen thousand horse power each, with your additionally installed capacity it was rated at thirty-six thousand h.p.?

A-- Yes.

Q-- How much more were you able to get? A-- I think 18,600 as a matter of fact; you are able to overload these machines ten, fifteen, or twenty per cent.

Q-- In Mr. Francis' reports he puts it during eighteen or nineteen you made this extension? A-- I should say that is correct.

Q-- When did you have them ready for operation?

A-- We had the wood stave pipe line in operation in June or July 1919, as a temporary connection to the main system,





pipe lines one and two and sometime in 1919 we were ready to operate the generators.

Q-- Can you tell me the date? A-- I do not know the exact dates?

Q-- Some time in the year 1919? A-- Yes.

Q-- I see in Mr. Francis' report he says the generators were erected in the early part of 1919? A-- Yes.

Q-- Then I see by Mr. Francis' report the total cost of the work was \$3,509,321.95? A-- Yes.

Q-- That the estimated cost was \$1,815,233? A-- Yes, 1917.

Q-- Now, in other words your actual cost was approximately double the amount of the estimate? A-- You must take into consideration that the \$1,815,000 did not include all the estimates that entered into the \$3,500,000. There are a great many additions that were put on by exigencies of which we had no knowledge at the time the estimates were prepared, and these were conditions that were forced on us by outside bodies.

Q-- I want to come to this in detail, but before doing that I want to ask you about another plan - apparently there was an earlier plan for increasing the efficiency of the existing plant without the installation of the additional unit? A-- I should judge that was probably a study; it was more or less a study.

Q-- Mr. Francis in his report, deals with the matter in this way:

"The addition as originally conceived involved only the use of the residual capacity of the fourteen installed units of the plant, said to be approximately 25,000 h.p., susceptible of reclamation by reducing the hydraulic head losses in conduit No. 1 in conduit No. 2. Comprehensively, therefore, this project comprised the installation of a third wood stave pipe line of comparatively small diameter leading



"from the available connection at the gatehouse and following along the surface contours as far as practicable down to a connection with No. 2 surge tank. This plan would have relieved the abnormal draft on conduit No. <sup>1</sup>~~3~~ and conduit No.2, thereby increasing the head on the turbines".

Do you recall that plan being before you for consideration Mr. Gaby? A-- I remember that the matter was discussed and studied previous to the estimate of \$1,817,000 but I do not recall the particular details with it at the present time.

Q-- Have you any report covering this? A-- No, I don't know of any just at the moment, if there are any I will be glad to bring them.

Q-- I think you were asked to look up and see if you had any? A-- Yes, I haven't been able to find any up to the present time.

THE CHAIRMAN: Who prepared these? A-- Who would prepare the report?

Q-- Yes. A-- It would come through ~~Mr.~~ Acres or through his Department.

HON. MR. ROWELL: I notice on the Commission's file a memo of February 23, 1916, headed memo to chief Engineer re Ontario Power Company; do you recall that memo?

A-- I should judge, I do.

Q-- Do you recall your considering this matter with the Commission? A-- Yes, I should judge so.

Q-- The third pipe line as per <sup>attached</sup> plan and description? A-- Yes.

Q-- Does that relate to this first proposed pipe line?

A-- I think that it probably related to the Ontario Power Company putting in the third pipe line, that is my recollection.

Q-- This was before you had purchased the Ontario Power Company property? A-- Yes.





THE CHAIRMAN: We asked for this sometime ago, is there any difficulty in locating it? A-- It would probably be a memo to be located in the files of the Commission.

Q-- It would be, I suppose, in the Ontario Power Company's files? A-- It may be in some of the engineer's files, departmental files, and they would have to go through these files.

HON. MR. ROWELL: I notice, Mr. Gaby, in the minute book of the Ontario Power Company, minute book No. 12, page 22, on the 20th December 1917, at a meeting of the directors, the following:

" The Chief Engineer submitted a further report with respect to the construction of a wood stave pipe line at Niagara outlining an estimated expenditure of \$1,806,000 covering the supply of an additional 50,000 h.p. The matter was carefully considered and it was decided the scheme was necessary and feasible provided financial arrangements could be carried out and the matter was left in the hands of the President to submit a complete statement to the Bank of Montreal with a view of obtaining the necessary money to cover this work".

That suggests a prior report, but so far we have not been able to locate any minutes covering it.

A-- These reports are being got together as rapidly as possible.

THE CHAIRMAN: Have you got one there, Mr. Gaby?

A-- No.

HON. MR. ROWELL: Just leaving that, upon the report and recommendation of the Chief Engineer, referring to the shortage of supply for the units he has recommended a wood stave pipe line? A-- Yes.

Q-- Can you tell me if that is the first minute you have relating to this matter? A-- I haven't looked them up;



there has been placed before me a statement of December 5th; that was the first minute.

Q-- December 6th, was that the one I read? A-- The 20th.

Q-- What is the minute of the 5th you have just read?

A-- That is the minute of the 6th, the matter of the wood stave pipe line to <sup>prepare</sup> plans and material covering the proposed work etc.

Q-- December 20th, that is the one I read. A-- January 2nd, I suppose, is the next.

Q-- I only want matters dealing with the plans, estimates, and cost of construction, I do not want to go into the details; report of the Chief Engineer re expenditures, turn to that July 11, 1919, page 94.

A-- Report of the Hydro Power Commission \$2,822,850, April 15th in connection with the third pipe line etc., read and noted.

Q-- The report of the Chief Engineer respecting the placing on the books of the Company of a report to the Hydro Electric Power Commission of Ontario of the sum of \$2,822,850 in respect to expenditures, to be considered as a liability, April 15, 1919. That was in connection with the third pipe line and was read and noted. Up to that time you hadn't completed the expenditures in respect to the work? A-- No.

Q-- I do not see on this schedule of minutes any other reference to costs or estimates? A-- It would probably come in in an unofficial report of the treasurer.

HON. MR. ROWELL: Mr. Lea can you tell us whether there are any other reports or references in the maps to the plans or the development or the estimated costs?

MR. LEA: I do not think so, any more than the annual general meeting is a financial statement in each case.

Q-- Where is the minute of the Annual General Meeting?

MR. LEA: It is every year, early in January.





THE CHAIRMAN: I doubt if you will find much in these annual general meetings. A-- There would be the financial statement and expenditure.

HON. MR. ROWELL: Simply showing the total expenditures.

THE CHAIRMAN: You said it would be in the treasurer's report. A-- The chief accountant or the treasurer would have that.

HON. MR. ROWELL: Except such things as may be contained in the annual report which we will check up, we have now got all that appears to be in the minutes relating to the plan for construction, the estimated cost Mr. reports on the actual cost, I believe, Mr. Gaby. Taking this original proposal, tell us how it was contemplated that that should work out. A-- Well, I think that statement entered in Mr. Francis' report covers it pretty fully. We expected that upon the installation of a pipe we would reduce the hydraulic loss in the first two conduits and that would increase the efficiency as far as water transmission is concerned, permitting of greater head and greater capacity of the turbines already installed.

Q-- What additional power would that give you?

A-- We estimated around twenty or twenty-five thousand.

COMMISSIONER HANEY: Mr. Francis says twenty-five thousand? A-- Yes.

HON. MR. ROWELL: Tell me what you estimated the cost of that would be? A-- I do not remember any estimate, at the time, being prepared, there may have been but I don't remember.

Q-- Who would prepare such an estimate? A-- As far as the hydraulic features of the proposition are concerned, they would be prepared in Mr. Acre's department, and if there were any electrical features it would be prepared in Mr. Brandon's department.



Q-- Were there any electrical features? A-- No.

Q -Purely a hydraulic proposition? A-- Yes.

Q-- Now then, you decided apparently, against that and in favour of the plan which was finally carried out?

A-- Yes, in view of the situation, and the necessity of making munitions, more power was required and had to be obtained for that purpose. A power controller was appointed, and he pushed for additional supplies for his munitions.

Q-- How long did you continue to operate that third pipe line and the two generating units established at that time? A-- I think the third pipe line is in operation to date; the two generating units were destroyed in April of 1922.

Q-- How are you operating the third pipe line at the present time? A-- Operating it as a waterway for transmitting water to the present hydraulic equipment.

Q-- In the way you contemplated using the original?

A-- Yes.

Q-- What additional power are you able to secure?

A-- I would say probably in the neighborhood of fifteen, with a probable peak of twenty thousand.

Q-- Is that due to the type of construction or the actual result less than your estimate? A-- I would not like to say off hand; we might not get an extra twenty-five thousand under certain conditions. Under normal operating conditions we get 15,000 h.p. additional.

Q-- Can you tell me this, is the amount you are now getting out of it, a matter determined by operating conditions, or is it the maximum you can get out of it, owing to the actual results from the particular structure you have installed?

A-- I would say it is more a matter of operating conditions and arrangement of units, as the grouping of units within the





power house. I do not believe we ever tried a test of the maximum we could get from the three pipe lines with the present equipment.

Q-- Can you tell me what was the amount you got, what was the actual amount by which you increased your output in the Ontario Power plant, by reason of this additional pipe line?

A-- Including the generating equipment?

Q-- Yes. A-- About forty to forty-five thousand h.p.

Q-- What were you getting before you installed?

A-- Altogether about one hundred and fifty-four to one hundred and sixty thousand.

Q-- After it was installed you were able to secure regularly?

A-- About 197 to 201, or approximately 200,000 h.p. depending on conditions.

Q-- That represented your regular operating conditions?

A-- Yes.

Q-- Who prepared the estimate upon which you started this work? A-- As far as hydraulic features are concerned, prepared by the hydraulic department, and submitted by them for approval, and the electrical end, the electrical department.

Q-- Did you go over these estimates before you submitted them to the Commission? A-- Yes.

Q-- Did you agree with them? A-- To the best of my judgment, yes.

Q-- On what date did you submit them to the Commission?

A-- I should say December 1917.

Q-- You have been asked, Mr. Gaby, to look into, or probably Mr. Pope, and I presume he has sent it on to you, to look into and be prepared to speak on certain aspects between the estimates and the cost; I want to ask you with reference to that? A-- I will be able to answer in a general way, but in view of the work I have been doing since



this report was submitted on Monday morning - I was out of town on Tuesday, and Wednesday engaged with the Hydro Electric Power Commission, and here - and I have not been able to go into the matter in detail but from my knowledge of the work, I will be able to answer in a general way.

Q-- I see for the wood stave pipe the estimated unit cost was \$53.23 per lineal foot, the actual unit cost was \$71.70 per lineal foot; what is the explanation for the increased cost over the estimate?

A-- The extraordinary conditions obtaining at that time as far as labour is concerned, and the inefficiency of labour due to the conditions under which they were operating, and the increase in the cost of materials. We had to contend with conditions we had no knowledge of, when we compiled these estimates in 1917. We had to place around our work barb wire entanglements, and had to have regiments of soldiers to guard it, and other conditions that tended to very great inefficiency as far as labour was concerned. We also had illness, a flu epidemic and other illnesses, which increased the cost of labour over that upon which our estimates were based.

Q-- You, of course, did not have to pay any of the costs of the soldiers, did you? A-- We did to some extent, I don't know just what it was, I believe for maintenance, but I don't believe we paid them any salaries.

Q-- I would assume the expenses of the military were borne by the Government? A-- Yes, that is probably so. Any expense we were put to, I presume would be providing camps, and things of that kind.

THE CHAIRMAN: Is there anything in the final cost to show you did pay anything? A-- I couldn't say without going into detail; it would come under administration





\$240,000 which appears at the end.

Q-- You could easily ascertain whether there was any?

A-- Yes.

Q-- I would hardly anticipate there would be, usually the Government pays all expenses in connection with the military.

COMMISSIONER J. A. ROSS: There is an item of \$40,000 for special protection? A-- We had to put in special police.

Q-- That would be different to the maintenance of soldiers? A-- There were special guards on our own account, and they may have included something for the barbed wire entanglements.

COMMISSIONER HANEY: Was the pipe line erected by contract? A-- No, we couldn't get any contracts, it was day labour. Conditions were so extraordinary, we had to carry on the work ourselves.

HON. MR. ROWELL: You told me this morning, in connection with the unit costs on the Chippawa, you were able to keep it substantially within your estimates during the year 1918?

A-- Yes.

Q-- I do not recall the exact date, I think you said sometime into 1919? A-- I referred to the unit cost in a general way. It was not a large amount, it was only a small amount, and probably this will illustrate to you in a general way why. Now the plan here shows an analysis of the labour conditions, that is labour contents in a yard of rock, and there is very little change in January eighteen and November eighteen. Then you will notice a very rapid increase in the labour contents showing <sup>labour</sup> inefficiency at that time.

Q-- That is not in yet? A-- No, I want to speak to that later, and put it in later. It shows the average rate per man per hour from 1917, right through until January 1923,



shows the labour contents of one yard of rock, the labour contents of one yard of earth, the man hours, the pay roll as paid, and as actually paid from the Queenston-Chippawa job. I think that probably better go in as you are dealing with costs.

Q-- Is there any objection to it going in now? A-- Not at all.

Q-- I mean as we are dealing with labour?

A-- That does not apply to the conditions on the Ontario Power Company, as to actual conditions, that is applicable to our conditions on the Queenston-Chippawa development.

EXHIBIT NO. 57 : Filed by Hon. : Blue print - chart  
: Mr. Rowell :  
: April 5, 1923 :

Q-- This represents the actual cost as it worked out on labour during the period of your Chippawa development?

A-- Yes, it illustrates the conditions, the other conditions on the job have to be taken into consideration in analysing that diagram.

Q-- I have not heard any discussion locally that there was any inefficiency in labour in 1915, but I thought the question of labour and efficiency was something that developed in 1919, but reached its maximum in 1920?

A-- I think from the public records, we have been able to find, such as the labour records as Ottawa, index of the builders exchange records, that labour was inefficient about seventy-five per cent in 1918, and about ninety per cent in 1917; that is our information as collected from various sources, and compiled.

Q-- You mean that labour in 1917, was ninety-per cent efficient as compared with? A-- 1914.

Q-- And labour in 191<sup>9</sup> was only 75 per cent? A-- 60 per cent and 75 per cent in 1918.





Q-- In 1918 it was 75 per cent as efficient as 1914, and 1919 60 per cent as efficient? A-- Yes.

Q-- In 1920? A-- 50 per cent.

Q-- 1921? A-- Approximately 60 taking the whole year; we did not go beyond that, it is better still, has improved since.

Q-- Then these estimates were made in 1917? A-- 1917, yes.

Q-- When you had the condition of labour as it existed at that time? A-- Yes.

Q-- What work was done, you have told us the principal work was done in 1918? A-- 1918, and 1919.

Q-- Can you tell me whether the pipe line, so far as it is concerned, was constructed in 1918? A-- I should say so far as the excavation for the pipe line, and the construction of the pipe line, that was done in 1918.

THE CHAIRMAN: I am not quite clear what you mean by 50 per cent efficient; would it mean where you had to spend one dollar in 1914, that you would get only 60 per cent as much for your dollar in 1919, as you did then?

A-- No, that actually refers to the efficiency of the man as to the amount of work.

Q-- He may be making a good deal more? A-- As a matter of fact, taking the information from the different records in 1920, they had 55 per cent efficiency, and wages were 200 per cent, and therefore there was a total increase in the work done, of 300 per cent in that year.

Q-- So that you would, for 25 per cent expended in 1914 get as much as it would cost you ~~for~~ a dollar for in 1920?

A-- Yes.



HON. MR. ROWELL: Then have you prepared any statement comparing your estimated cost with your actual cost on this pipeline extension? A--Yes, I believe we have.

A complete statement was presented and is contained in Mr. Francis's report, I believe. It shows a comparison. And we also prepared a statement taking into consideration the efficiencies that have been just outlined as to what the actual cost would have been had we had the conditions obtaining in 1917.

Q--What does that show? A--It shows that the net amount, not including the overtime, for labour cost was \$1,353,875, and the gross amount cost us \$2,196,289.32 for labour over the period for 1918-19; whereas on equivalent rates of 1917 it would have only cost us \$671,316.

Now applying that to labour and material cost based on works estimated at 1917 rates our labour and material in 1917 would have cost us about \$1,513,242; whereas the labour and material actually cost us \$2,101,725 on the work actually estimated. And the administration and engineering, as chargeable for 1917 conditions, was \$213,666, making a total of \$1,726,908, as compared with the original estimate; against an actual cost of \$2,500,000. The cost of additional work which was not estimated upon in the original estimate would have been \$626,004.45, and taking the actual cost it was \$1,009,299, making up the total of \$3,509,000. for the cost as against an estimated cost on 1917 conditions of \$2,211,466.

Q--Have you an extra copy of this? A--No, I have not. I do not know whether this is in Mr. Francis's report or not. It is the "analysis of cost" and your Commission has a copy of that. It was submitted to Mr. Francis.

THE CHAIRMAN: What is the date of that file?

A--March 6th, 1923.





HON. MR. ROWELL: This is not in Mr. Francis's report, so that it had better be marked as an Exhibit. This is one of a series of sheets relating to and explaining this particular matter, is it not ? A--Yes.

Q--We had better mark the whole report ? A--That is our file copy.

Q--A duplicate can be made and you can substitute a copy which can be stamped ? A--Mr. Lea will take care of that.

EXHIBIT No. 58. : Filed by Hon. : Analysis of cost.  
: Mr. Rowell, :  
: Apr. 5th, 1923.:

Q--Mr. Francis's report is dated the 6th March, so that apparently this matter was not before him. Now just let me see if I follow you. The cost based on the work estimated, that is, taking the quantities that go to makeup the work as you prepared your estimate, you say the actual cost of labour and material on the work as estimated is \$2,101,725 ?

A--Yes.

Q--There was additional work that was not covered in your original estimate, \$845,191, which cost you that ? A--Yes.

Q--Making your total cost of labour and material \$2,949,916 ? A--Yes.

Q--Then you say "Overtime" what do you refer to there ?

A--That would be extra time. For instance, we pay the men time and a half, and that would be the half-time that we had to pay extra for which we get no return, as far as labour was concerned. The estimates were based on full time, but if you paid a man time and a half for extra time, the half-time that he would get paid for you receive no return whatever for it. You would get the same number of hours work and would get no return for the extra cost of the time.



Q-- Why did you figure it on straight time, when you were dealing with a rush job for war emergency ? A--Because we expected the work to be carried on on that basis, not on overtime but on straight time; but due to the fact of the shortage of labour it was necessary to carry on overtime work in order to get on. We could not get sufficient men to carry on that job, under the conditions maintaining at the time that work was done.

Q--Then to give the actual cost of labour and material on the work estimated, you would have to add to the \$2,101,725 this additional \$848,191 ? A--Yes.

Q--Making your actual cost on the work estimated \$3,092,529, as I have figured it ? A--\$3,092,529 is correct.

Q--Then you have here, administration, engineering and interest during construction, \$296,736 ? A--Yes.

Q--Based on the work estimated ? A--Yes.

Q--Now that is the proportion of those items based on your actual cost of the work, covered in your original estimate ? A--Yes.

Q--Then you attribute administration, engineering and interest during construction to the additional work \$120,030 ? A--Yes.

Q--Making a total of \$416,792, administration, engineering and interest during construction ? A--Yes.

Q--Then you put down the total cost of the work, based on the work estimated on, \$2,500,022 ? A--Yes.

Q--And the cost of the work which was not estimated on, \$1,009,299, making your total cost \$3,509,321. Then you have here a further schedule headed 1917 rates, labour and material \$1,513,242, Now is that your estimate ?

A--That is, as the heading says, cost based on the work estimated.





Q--Is this the figure for labour and material included in your actual estimate ? A--No, that is the time that actually went into the work estimated upon at the rates in force in 1917. The estimate would be a different proposition entirely; but that is the actual man hours that went into the job, at 1917 labour rates.

Q--Then the actual time hours that went into the additional work, at the 1917 rate, \$611,788 ? A--Yes.

Q--Making the total on the 1917 rates of \$2,125,030 ?

A--Yes.

THE CHAIRMAN: What was the date, Mr. Rowell, of the decision of the Commission to begin construction ?

HON. MR. ROWELL: December 1917.

THE WITNESS: The early part of December 1917.

Q--Then you add administration, engineering and interest during construction, on the basis of 1917 rates on the work estimated, \$213,664; and on the additional work \$72,672; or a total of \$286,336 ? A--Yes.

Q--Giving you your cost, based at the 1917 rates, on the work estimated \$1,726,906 ; on the additional work, \$684,460; or a total of \$2,411,366. Now I just want to see what you say this analysis shows, Mr. Gaby. Does this figure of \$1,726,906, on the basis of the 1917 rates, give the figure which you say you have compared with your estimate ? A--Yes.

Q--And you say, comparing that with your estimate,-- what was the amount of your estimate ? A--\$1,317,000.

Q--And you say that on the basis of the 1917 rates, you have kept within your estimate ? A--Yes, that is allowing for efficiency.

THE CHAIRMAN: Were the estimates sent on by you to the Commission identical with the estimates submitted by Mr. Acres to you ? A--They may or may not have been; I



do not just remember, but I do not think they were. Of course, as far as his own work is concerned, possibly it was, with the additions of overheads or something of that kind onto it; then I would add on the electrical department's estimate and round it out to take care of administration and so on and send it on to the Commission.

Q--The part that was Mr. Acres's ?

A--The part that was Mr. Acres's most likely would be, yes.

HON. MR. ROWELL: Then, dealing with the additional work, I just want to get what your explanation is. What additional work is included in your actual cost that is not covered in your estimate. Is that tabulated ?

A--I think you will find that is tabulated in comparison of estimates and actual cost, in Mr. Francis's report.

Q--At page 20 of Mr. Francis's report ?

COMMISSIONER J.A. ROSS: Page 21.

HON. MR. ROWELL: Page 21. I see in the conduit, wood stave pipe there is very little difference in quantity ? A--No.

Q--Only 33 feet ? A--Yes.

Q--In your excavation, earth and rock, you are substantially less than your estimated quantities, are you not ?

A--I think you will find that is due probably to a little difference in distribution. That would be my recollection at this time, that in taking these quantities out we would estimate some of the excavation which is otherwise included in your distributor or some other sections of your work. There might be some little difference in the excavation items. Of course this is as we gave it to Mr. Francis, as near as we could check it.

Q--There is approximately 5,000 cubic yards less--

THE CHAIRMAN: Far more than that.

THE WITNESS: I think my interpretation of that is





correct!

HON. MR. ROWELL: It is 4,400 cubic yards, about. You estimated the total of excavation at 150,000 cubic yards; the actual quantity was 96,526 of earth and 49,124 of rock, or a total of 145,650 cubic yards? A--I think, with the information that we had available, we were really not in a position to distribute it in the same way that it is distributed here, and you cannot say that that 150,000 was exactly chargeable to the section which was distributed; but the wood stave pipe line as it is in this statement under actual cost and items as constructed, as the 150,000 also included items of excavation in the distributor and the connection to surge tank as well. If you take the total, I think you will find that the excavation yardage is greater than we actually estimated.

Q--Now then, the distributor, the quantity of steel you estimated was 133 tons, and the actual quantity was 158 tons?

A--Yes, we estimated on the data that we had available, that is, taking the plans which were before us for the penstocks of the old plant of the Ontario Power Company; with that information before us, we estimated 133 tons; as a matter of fact, in view of the increasing the size of the pipeline, the penstock was slightly increased also.

Q--Then the surge tank, the steel you estimated at 297.5 tons and the actual quantity was 331.3 tons. What is the explanation of that increase? A--Just the same. We estimated on a general plan, and when we came to the detailing of the plans it required additional tonnage.

Q--Why, did you not have those details, did you not work out the details upon which you based your estimate?

A--No. We had very little information as to the underground conditions of soil and rock. And you will note that in our original estimate it was all estimated on earth. The conditions were changed not only by the conditions as



we found them but by the requirements of the Park Commissioner requiring us to go deeper, requiring us to back fill the wood stave pipeline, and requiring us to put in a large number of feet of concrete envelope which was not estimated upon. Those are in general the reasons for the changes. Another thing is that we had just taken over the Ontario Power Company Plant in August, 1917, and we hadn't time or opportunity to investigate the conditions thoroughly in order to prepare a detailed estimate for the Commission. The urgency of the situation demanded an immediate expansion of that plant to meet the munitions requirements and the requirements of the municipalities; and it was a general estimate prepared at that time, to try, as nearly as we could, to give the information to the Commission to enable them to judge whether they would go on with the proposition or not.

THE CHAIRMAN: Hadn't you inquired from the Park Commissioner how you would be required to locate it, before you made the estimate? A--No. We had information from them that we would be able to go on, and they were co-operating with us in a general way. But as to the underground conditions and to what their final requirements would be, they changed from time to time as the work went on, and as to how we should dispose of the material. If we had started to negotiate that, it would probably have taken months to bring it to a conclusion, and we would have had to submit to them actual detailed plans. As a matter of fact we had only general plans, and we had made no borings to investigate what the rock conditions would be. We only had what information the Ontario Power Company had before it.

Q--What about the other pipeline that Mr. Acres had designed? A--That was on the surface, simply a small pipeline, of approximately eight feet in diameter, or more,





to be located to follow the lines of the surface, as a very temporary measure, to carry the pipeline in that way through the park was objected to by the Park Authorities. That was the original suggestion, to follow the contour of the surface.

HON. MR. ROWELL: Was that the reason you rejected it, because the Park Authorities rejected it ?

A--No, not wholly; I think the real reason was that it would give us insufficient power, and the fact that we had obtained information as to where we could get second hand turbines which would be suitable for that equipment and give us additional power; and the Commission then instructed us to change the plans and get a much larger amount of power with a small addition. The larger part of the work is in the construction of the pipeline and the work appurtenant thereto.

Q--On the penstock you estimated 201 tons of steel; your actual tonnage was 310 tons. Why that great difference, an increase of 50 percent in the steel in that penstock ?

A--That was due to the fact that we had used the penstock design as originally installed by the Ontario Power Company and the size that they had in; and it was the increase in size and strength of the penstock installed by the Commission,

Q--Did you not, in your estimate, consider the size and character of the penstock which you were going to install ?

A--No, as I have stated, we had a general estimate prepared in a very few weeks previous to being submitted to the Commission; probably between December 5th, when the instructions were issued, and December 20th, when it was approved of. We only had the information that was available to the Ontario Power Company; and, if we had waited to get the detailed information to enable us to carry on this work



it would have meant months of delay.

Q--But, Mr. Gaby, surely in making up your estimate it was based on certain plans which you had at that time for doing the work, and that would include a certain size of penstock, would it not ? A--Yes.

Q--Then, did you actually change the size of the penstock in your plans ? A--Yes, we did, as the detailed plans came through and the detailed investigations of the requirements of the job came along, we made the necessary changes to meet the conditions. In other words, there were no plans excepting those which we had available from the old Ontario Power Company.

Q--Why was the change made so as to enlarge the penstocks, what was the particular purpose of it, to get more power, or what was the purpose ? A--To reduce, as far as we could possibly the losses in that penstock and get the highest possible efficiency. If we had put in a smaller pipe we would probably have reduced the efficiency of the operation of the pipe, and to some extent there would be additional losses; but in our judgment, after thorough investigation, the larger pipe, whatever it was, as I do not remember the details of it, was the one which we determined upon as being the most efficient and necessary for the turbines and the generators which we proposed installing. You appreciate that we did not have all the details, as far as those turbines were concerned, at the time we prepared our estimates. We only had in a general way estimates as to the approximate cost that we could obtain them for from the company who had them for sale.

Q--I am at the present time dealing not with cost but with quantity ? A--Yes, and that would include that to; that was obtained from time to time as we went on. And you will remember that it was thirteen feet or less, I think, that





the original estimate was upon; and it was only after consultation with the Pacific Pipeline Company, I think it was, of British Columbia that we determined to put in the thirteen foot six inch pipeline, which meant a change in size, as far as the waterway is concerned.

THE CHAIRMAN: Have we a copy of Mr. Gaby's reports to the Commission? A--No, they are looking them up in the files now. There are quite a lot of them.

Q--I would like particularly to see that report of Mr. Acres on the original proposal? A--They have been looking for it, but I have not been able to get hold of it. It was probably more or less a general report, and anything that was done in it was a mere study; and as soon as we found, after discussion with the Commission, that the thing required more power, that was discarded and no more notice was taken of it.

COMMISSIONER R.A. ROSS: I suppose the condition was that you wanted power, and you wanted it in a hurry, and you went out after it and got it. Mr. Acres's suggestions, and others were discussed and they did not give you the power you wanted and that you were after, and that is probably the reason you turned it down? A--I think that is the real situation, that it was simply a study and it was turned down, without any detailed consideration by the Commission, as not being sufficient; and furthermore we obtained the information that we could obtain these second hand turbines in a very short time, and we based our increased capacities on that.

HON. MR. ROWELL: Then I notice that the rock excavation in the penstock was substantially increased from 1900 cubic yards to 2656 cubic yards, an increase of approximately 50 per cent. To what was that due?

A--To the enlargement of the penstock.

Q--And the concrete is increased in the same way, due to



the same cause ? A--Yes. There may have been more over-break than we figured on, or something of that kind.

Q--Then the substructure, I notice that the rock excavation there is 24,000 cubic yards ? A--I do not think there were any details at all as to the excavation in rock, simply a lump sum of \$124,000.

Q--The \$124,000 you included in your estimate for the rock excavation of this substructure ? A--Yes.

Q--And it cost you \$300,000 ? A--As a matter of fact, I think that was due largely to the lowering of the Power House floor. The original estimate, I think, was figured on the same type of construction as the old turbines. The floors were dropped about twelve feet, which meant a considerable change in the excavation at the power house site, increasing the capacity, of course, of those generators and turbines; and that was about twelve feet, as I recollect it of a change made there, of additional excavation.

Q--Then were those the only changes in quantities of labour or material that affected your cost ? A--There would be the increase on concrete that was not estimated on at all, for the envelopes on the pipe lines, and the back fill that was not estimated on at all; certain distributor earth, and distributor and surge tanks.

Q--Now, let us deal with that ? A--The water supply and drainage are another item that was not figured on; and additional mechanical equipment; I believe the mechanical equipment was due to the fact that we put in separate oil pumps and things of that kind, which we probably anticipated using from the main system.

Q--Before we pass from the quantities, do you say that you did not consider there would be any rock excavation at all for the conduit ? A--Very little. The majority of that I think was based on earth. Very little heavy rock excavation.





Q--Included in your estimate it is 150,000 cubic yards of earth and rock ? A--Yes, we figured the whole thing as a unit. I remember we figured very little rock excavation in connection with that proposition.

Q--On what did you base that. You had not made any examination ? A--No. We had made no examination. We only had the general information from the Ontario Power Company's records.

Q--Now, coming to the matters which were not covered by your original estimate at all, just let us have them one by one insofar as they increased your actual cost. What do you say they were ? A--I think they are set out very fully in that statement which was submitted to Mr. Francis.

Q--Appearing in Mr. Francis's report, on page--

A--It would be starting on page 19. You will note the backfill and topdressing.

Q--And concrete and drains. They were not included in your estimate at all ? A--No, we figured on an open excavation.

Q--Why ? A--Because it was only a temporary proposition, and we only had five years right in the Park, and it was expected that that pipeline would be removed and used elsewhere, at some later date.

Q--And why did you have to put in the topdress\_ing?

A--On account of the directions of the Parks Commissioner.

Q--That was a matter then, that you did not take up with the Parks Commissioner before you made your estimate ?

A--We did not have any full details, No. We knew that part of the line, as a matter of fact, a large part of that line today is not backfilled, and we had no knowledge as to what they would require us to do. We expected to get away from practically all of that.

Q--Does that apply to the topdressing also ? A--Yes.

Q--Now, how about this concrete ? A--That is also due



to the requirements of the Parks Commissioner to some large extent.

Q--What was that concrete for ?

A--Where a certain amount of heavy backfilling had to be done, the strength of the wood stave pipeline, especially with no water in the pipe, would not stand the weight; therefore we had to put a cement envelope around it to hold the backfill. We had to have sufficient strength there to carry the overburden or backfill; and that pipe had to be strengthened in some way, and the only way to do that was to surround it by an envelope of concrete, which was done, and the pipe itself was used as a form work.

Q--How about the drains ? A--Of course we had no knowledge as to what drains we would contend with. We expected we would not have any.

Q--Didn't you include in your estimate an item for contingencies to cover any possibilities of this kind ?

A--Not a very large item, practically nothing. There was \$105,000, of course, for engineering and contingencies.

Q--What per cent is that, about ? A--About eight per cent, I think. No, it is about 6½ per cent.

Q--And that was quite inadequate to meet the contingencies that you met with ? A--The extra amount of work that we were required to do, yes.

Q--are not the contingencies items in an estimate intended to cover just such matters as may arise incidentally in the construction of a work such as drains and these other matters you have mentioned ? A--Yes.

THE CHAIRMAN: If my recollection is right, you included 5 per cent for contingencies in the Chippawa estimates which you were making about this time ? A--Yes, but apparently in this statement here, there is only about \$105,000; it is all attributable to engineering; and any contingency items,





apparently, must have been included in the items as they went along. The seventy cents would include what we figured on as contingencies in the earth excavation, and that possibly might include such things as drains. We did not expect to run into any drains; but that is only a small item anyhow.

Q--You estimated your earth at how much and your rock at how much ? A--It is all combined, 150,000 at 70 cents.

Q--Your estimate at this time on the Chippawa was approximately 30 and 100 ? A--Yes, but you must appreciate that we would not have used the same unit cost or estimates for this type of construction as we would on the Chippawa; for a great deal of this is hand work and small shovel work and barrow work, with very small equipment, which would be a very different thing entirely. And this 70 cents would be probably for earth only. In other words, it would cost you twice as much to do this work as it would on the Chippawa work, where there was a very large equipment and there were full facilities for handling earth and rock.

THE CHAIRMAN: We asked that the engineers who made up these original estimates be here. Mr. Acres is not here.

A--The engineer on the construction is here to give you any information he can; and we will have Mr. Acres here this afternoon.

THE CHAIRMAN: It is now time to adjourn.

HON. MR. LUCAS: Mr. Chairman, I have only had a moment to speak to Mr. Rowell. I understood that Mr. Rowell had made some statement that he was closing his evidence as to the first two items on your inquiry, that is the inquiry that you have been conducting up until this morning and as far as Chippawa and Queenston is concerned, is covered by the item of estimates submitted from time to time to the Hydro Electric Power Commission of Ontario, or the Queenston-



Chippawa Power Development, and also to estimates for the said work submitted by the said Commission to the Government of Ontario; and, secondly, the reasons for increase from time to time in the estimates for Chippawa Power development.

THE CHAIRMAN: I understood Mr. Rowell to say he was not closing.

HON. MR. ROWELL: That is so.

HON. MR. LUCAS: The understanding that I have, sir, from Mr. Rowell, yesterday, in order that it might be of record, is that before that is closed, Mr. Rowell will have read the evidence that I have referred to, given by Mr. Stuart and Lea before the Public Accounts Committee or will have these witnesses called.

HON. MR. ROWELL: Yes. I told my learned friend that before we finally closed on the question of estimates and costs I would submit to the Commission either the evidence already given by these witnesses before the Public Accounts Committee, or would call them here to give evidence before this Commission.

HON. MR. LUCAS: Then, the other point. My submission is that before any interim report can be made as to the reasons for the increase in estimates, you must, of course, hear the evidence of Stuart and Lea, if they are to be heard at all.

THE CHAIRMAN: Oh, yes, no doubt that will be heard before any report is begun, or else they will be called, one or the other. We want to give you every facility.

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Commission adjourned at 1.00 o'clock p.m., Thursday,  
April 5th, 1923 until 2.30 o'clock p.m.  
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AFTERNOON SESSION.

TORONTO, April 5th, 1923.

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F. A. GABY : Resumed, Examined by HON. MR. ROWELL :

Q--Mr.Gaby, at the adjournment we were going over the items which had not been included in your estimates to be found on page 19 of Mr.Francis' report, and you were explaining these different items. Now, what items in connection with the distributor were not included in your estimate ? A--Well, some of that excavation, although stated as not actually included here, it would have been included in that 150,000 yards, under the first heading.

Q--Under the first heading ? A-- We had 150,000 yards, about 4,000 yards discrepancy between the item of 150,000 yards, and the actual excavation, under the heading, "Wood Stave, Pipe and Saddles."

Q--I see, under the heading, "Distributor," earth and rock excavation, earth 677, and rock 1,920 cubic yards; do you say part of that was included ?

A--It may have been included in the 150,000 yards, which is already shown in the item under the heading, "Wood stave pipe and saddles."

Q--Instead of being additional work not covered by the estimate, it forms part of the quantity contained in the original estimate of 150,000 cubic yards ?

A--I would not like to say, offhand.

Q--I mean, that is what I understood you to say, and I just wanted to see if that was your submission ?

A--Some of that item should probably have been taken out of the 150,000 cubic yards, and distributed under these quantities, but it would only be a small item, probably \$8,000 or \$9,000.

Q--So we will have it on the record, the excavation



is contained under the heading, "Distributor."

A--Part of it.

Q--How do you draw the distinction ?

A--I cannot tell you, I would have to distribute part of it at least.

Q--Coming to the next item, "Surge tanks," I see you include the items in estimating the whole of the excavation under that item ? A--Those would be items,--not knowing the exact location of the surge tank, it was estimated we could probably put the surge tank closer to the end of the distributor than we actually did, in view of the requirements of the Park Commissioners, we had to move it back to keep out of view of the refectory. Those are small items, and probably account for that additional amount.

Q--You also have the heading, "Surge Tank connection."

A--That would be the same explanation, that is, we had to go beyond the point which we had estimated, as far as the Surge Tank is concerned.

Q--Now, if one were to add together all these items of excavation under the headings, "Distributor," "Surge Tank," and "Surge Tank Connection," you would get the total, and could arrive at the difference between your estimate for excavation, and the actual excavation under the heading, "Wood stave pipe and saddles."

A--It is something in excess, I do not know what it is.

Q--Just look at the figures here, they seem to be not very different. Taking the excavation you have 2597 yards under "Distributor," and 1358 yards under "Surge Tank," and 1451 yards under "Surge Tank Connection."

A--Yes.

Q--Those three amounts added together make a little more than --

A--Than the 50,000 inserted in the item, "Wood stave pipe line."





Q--If you take them all, you get pretty near, a few yards over the 150,000 yards of excavation ? A--Yes.

Q--The explanation you gave about the items of excavation under "Distributor," apply equally to the items under, "Surge Tank," and "Surge Tank Connection ?"

A--No, as I recollect it, I would not say that it is; the surge tank, as I remember it, was moved from the location we had contemplated, some distance, on account of the requirements of the Queen Victoria Park Commission.

Q--The next item would appear to be, "Headworks."

A--No, "Drains," under "Penstocks." That item amounts to \$10,599.73.

Q--Why was that not covered, or is it covered by your "Contingencies ?" Or did you have any "Contingencies" in the estimates ? A--"Contingencies" were contained in the unit prices for each individual item, such as "Excavation," and so forth.

Q--Would that properly come under "Contingencies," an additional expenditure of that kind ?

A--I should say not, that comes in under "Penstocks," or probably, "Extra Drains not allowed for in connection with penstocks," that we had to put in.

Q--What do you insert the item of "Contingencies," to cover ? A--Usually to take care of such conditions that are referred to in the first item, that is in the earth and rock section we would<sup>not</sup> have full information in connection with the character of the materials we have to deal with, and we have to allow "Contingencies" for running into unforeseen work, upon which there is no information.

Q--Then, the next item is, "Headworks," why was there no estimate for that ? A--As I remember it, we probably



anticipated that the necessary work to be done at the headworks was in shape to carry on without additional expenditure by the Commission, but we had additional expenditure in connection with the necessary work between the wood stave pipe line, and the headworks.

Q--There is no original estimate for the water supply, and drainage ?     A--Yes.

Q -Why was that omitted ?     A--That was occasioned by encountering unknown water pipes and conduits in connection with the excavation, which had to be protected by the Commission, and reconstructed.

THE CHAIRMAN: I suppose those water pipes and conduits are all shown on the plan of the Park Commission ?

A--No, they were not shown on the plan of the Park Commission.

Q--Were they not laid down by the Park Commission ?

A--No, I think they were installed originally by the Electrical Development Company. The location was really unknown, either by the Electrical Development Company, or the Park Commission.

HON. MR. ROWELL: The next item is, "Mechanical Equipment," what was that ?     A--That, I am unable to say, inasmuch as that was additional pumps or equipment of that kind which we had to put in, and we had anticipated using the old plant. I have not checked that item.

Q--Then, the next, and one of the largest items, is, "Special war protection \$45,730.39," what did that relate to ?     A--That related to the police protection we had to provide on the job, on the advice of the Military, also the Park Commission. There were also certain camps, and materials, provided for the housing of the Military on the job, also wire entanglements, and things of that nature.

Q--"Administration and Interest less unclaimed wages





\$240,039.74," you had no item in your original estimate for Administration and Interest ?     A--Apparently no item was figured in for that.

Q--No estimate for that ?     A--No.

Q--That item amounts to \$240,039.74 ?     A--Yes.

Q--Is that not an item that should be included in the original estimates ? You did consider, in making the estimates, did you not, that you must allow interest during construction, and proper costs for administration ?

A--As a rule, we do, and in this case we allowed \$105,000 for engineering.

Q--Yes, you allowed for engineering, but apparently not for administration, or interest during construction ?

A--I judge, in the first place, that the amount for engineering was sufficient to take care of the administration that could be chargeable to that particular job.

Q--Then, one or two questions in reference to the change in the cost. Have you given us all the information you can as to the increase in the cost of the earth and rock excavation -- which amounts to a very substantial sum ?

A--I think all the number of yards of rock and earth taken out, and the costs, are included in the statement on page 19. The reasons were,     inefficiency of labour, and conditions under which we had to operate, as well as the increased rates of pay we had to pay over the estimate of 1917.

Q--I notice in connection with the steel, under the heading, "Distributor," you estimate the unit cost at 180.00 per ton, and the actual cost at 365.00.     A--You will appreciate we were operating under war conditions, and it was very difficult to get steel, we had to deal through the War Board at Washington, to get steel from the Des Moines



Company, and we had to take it at the price we could get it at. We estimated 180.00 as being the prevailing price at the time we made the estimate, but we had to pay 365.00 notwithstanding tenders we had.

Q--No doubt, parties desiring steel had to pay ?

A--Whatever the demand was.

Q--In connection with the penstock excavation, I see you estimated your unit cost at \$11, and apparently the actual unit cost was 4.05. Is that correct ?

A--Apparently, from the information we have here. I think that is probably right, because we would estimate a high cost for taking out that particular rock.

Q--You estimated \$11, and in that case you took it out at \$4.05 ? A--Yes.

Q--That is a case where you are very much below the estimate.

Then under the heading "Penstocks", concrete is estimated at a unit cost of 13.25, and the actual cost at 26.84 ? A--That would be made up by the increased cost of cement, stone, gravel, and the cost of transporting those materials; it probably included our cost of repairs to roadways which we had to make for the Park Commission. Increased labour charges would also enter into that, in view of the fact of the cost of hauling from the location where it was to where it was delivered to the Commission.

Q--"Power housesubstructure," was estimated at \$124,000, as a lump sum ? A--~~Yes~~es.

Q--The actual cost was \$392,211.39, of which you have told us part was made up by reason of larger quantities ?

A--Yes, we dropped the power house floor between 10 and 11 feet.

Q--The increase due to the increased quantities, according to Mr. Francis' report, amounted to \$177,778, but, even apart





from the increase in quantities, there was an increase in the cost exceeding the estimate, amounting to \$90,433.37 ?

A--That would be because of the increased labour costs, and costs of that character.

Q--You have all the figures from which Mr. Francis could check the details of that ? A--Yes.

THE CHAIRMAN: You spoke, Mr. Gaby, of the upward trend of labour costs during this and other years in making your estimate, should you not have taken into consideration and made allowance for the anticipated increase ?

A--We always anticipated that things would stabilize, and we looked forward to such a period.

Q--The war was on at that time ?

A--Yes, but no one was in a position to tell what would occur in the near future.

Q--Mr. Acres told us the other day that you expected labour costs to come down when the war was over ? A--Yes, we did.

Q--I do not think any reduction was anticipated.

COMMISSIONER J.A. ROSS: It was thought at that time that things could not be worse ?

A--That was the point of view of everyone, even at successive stages during the war we really felt that things could not be worse, that was our viewpoint. We did not try to anticipate the future in regard to increase in costs.

THE CHAIRMAN: In some of the reports the possibility is spoken of that you made contingencies in order to protect yourselves ? A--In the original report we did make that provision; I do not think anybody ever anticipated an increase of 134 per cent -- it might be 5, 10, or 15 per cent.

Q--You did not have that increase during the period in which this work was under construction ?

A--No, not the Ontario Power Company -- we are speaking



of the Queenston-Chippawa Development; we had some 50 per cent, counting the inefficiency in operation.

HON. MR. ROWELL: What were the figures for 1917 and 1918 respectively ? A--They varied from 155 to 204.

Q--What was the labour efficiency in 1917 ?

A--90 per cent.

Q--And in 1918 ? A--75 per cent, and 60 per cent in 1919.

There was, of course, the increase in labour rates also, which must be added in that period.

Q--You have, "Power House superstructure," where you had a lump sum estimate of \$100,000, and the cost is \$167,419 ?

A--We had half a dozen estimates at that time. I think, from the information I have before me, that there is a typographical error in the memorandum, with regard to the \$100,000, because in the report \$100,000 was stated as the estimated cost of the excavation on the Ontario Power Company basis, and further down in the report is the amount of \$170,000. That is shown in another memorandum which I have not with me here, but can produce it if you so desire.

Q-- That is the case where you say it should be \$170,000 instead of \$100,000 ? A--Yes, the memorandum from which the estimate was prepared had both figures in -- \$100,000 on the basis of the Ontario Power Company, and \$170,000 on the basis of conditions then existing. We had four or five estimates, and they varied from \$170,000 to probably \$160,000 some odd dollars.

Q--Mr. Gaby, is this report Exhibit No. 68 which you sent to Mr. Francis under letter of March 6th 1923, you report on this situation ? A--It is not mine, it is the report of the Construction Engineers in charge. That is a report I forwarded to Mr. Francis.

Q--Does it represent your views ? A--Yes, as far as that is concerned, I have no reason to differ from it.





Q--Coming back to what we were dealing with this morning, with regard to the addition as original conceived which simply involved making use of approximately 25,000 horse power, and the use of the residual capacity of the fourteen installed units of the plant, which was susceptible of reclamation by reducing the hydraulic head losses in conduit No.1 and No.2, which comprised the installation of a comparatively small wood stave pipe line leading from the available connection at the gate-house and following along the surface contours as far as possible to a connection with No.2 surge tank, thus relieving the abnormal draft on conduits No.1 and No.2, thereby increasing the head on the turbines. That states your view of the situation?

A--That, I think is reported in Mr. Francis' report, at page 13.

Q--That is just an abstract from that report. Have you been able to turn up that report I asked for?

A--No, I have not yet. That is the original report relating to the 25,000 horse power of residual capacity with the existing installed units.

Q--Then appears this farther statement :

" While the above scheme was in process of investigation, the load requirements for munitions became so urgent it was suddenly decided to purchase two second-hand turbines from The Aluminum Company of America, and also to buy two new generators for connection to the same."

Was it the opportunity you got to purchase this at that time, plus the demand for power from munition plants, that led you to change your plan?

A--I think it was one of the main considerations, and the most important of which was the urgent demand for additional power.



Q--Have you been able to turn out any further reports on this matter, Mr.Gaby, since you were here this morning ?

A--No, I did not look for anything during the lunch hour.

Q--You are not able to give us any farther information today in reference to the estimates and costs, than what you have already given us ? A--Not at present regarding the Ontario Power Company.

Q--Is there anything further you care to say about that particular matter at present ? A--About the Ontario Power Company ?

Q--About this particular explanation, have you given us all the information ? A--I think I have given you all the important information in connection with it, excepting the details as to what happened, the conditions of the job, as far as the work is concerned.

Q--Is there anything that Mr.Acres can tell us about that ?

A--Mr.Acres, and Mr.Trimble, can tell you as to the actual working conditions under which they had to carry on this work -- very extraordinary wartime conditions, and as to the interference between the two jobs, the Queenston-Chippawa work, and the Ontario job, two large organizations working close together, and considerable difficulties encountered on that account.

Q--I think that is all, Mr.Gaby. A--That is all, I think, excepting I have some memorandums here you asked for in connection with the labour troubles of the Commission; there are a large number, and if you like, we can put them in tabulated form, and draw to the attention of the Commission increased costs due to increased labour rates.

Q--I think that would be a most convenient way, if you will tabulate that information.

THE CHAIRMAN: Has Mr.Francis been over these memoranda ?

A--I do not think he has, I do not know.





In 1919 -- in fact, from 1918 to 1922 we reported to the Commission from time to time as to what occurred, but in 1919 we advised the Commission of the probable increase in the cost of labour amounting to \$6,000,000 to \$7,000,000 extra; and the same thing occurred in 1920 when we reported a probable increase of \$3,000,000 to \$4,000,000 more, or \$5,000,000 as the case may be, due to the increased labour rates on the job. Those reports are here, there are a large number of them. On each occasion it was drawn to the attention of the Commission that there would be an increase in cost because of the increase in rates, and the Commission always asked as to costs in connection with materials that were purchased from time to time.

HON. MR. ROWELL: If, as you suggest, you can give us that information in tabulated form, so we can get it in a relatively small compass, with the dates upon which they were presented to the Commission, it will facilitate the matter, Mr. Gaby ?      A--All right, sir.

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(Page 4917 follows)



H. G. ACRES, RECALLED, Examined by HON. MR. ROWELL

Q-- Mr. Acres, do you recall the original plan for this additional work at the Ontario Power Company? A-- It was done under my superintendence, yes, with regard to the hydraulic portion of it.

Q-- I see the report which has been submitted here states:

" That this project as originally conceived involved only the use of 25,000 h.p. of the residual capacity, susceptible of reclamation by reducing the hydraulic head losses in conduit No. 1, and Conduit No.2 ".

Did you prepare a report on that? A-- No, there was no report on record as far as I remember. The decision to install additional hydraulic capacity was made before the scheme had become sufficiently crystallized to be put in black and white. There are numerous memoranda and notes with reference to the scheme but as a whole it was never crystallized into the form of a definite scheme. Mr. Gaby said he couldn't quite remember, but I think that is my recollection of it, that the original scheme only got to the extent as far as I was concerned of a pretty definite lay-out, in my mind which had not been committed to the shape of a permanent record.

Q-- Did it reach the stage where you made any estimate of the cost? A-- Nothing that could be called a formal estimate

Q-- Did you reach any conclusion which you thought might fairly represent -- in other words, did you make any estimate at all? A-- I cannot say that I did Mr. Rowell.

Q-- You cannot give us any estimate of what that plan, if carried out, would have cost?

A-- The nearest reply I can give to that is, that the way the proposition looked to my mind, it would be a pretty





reasonably cheap way of getting some extra power very quickly. The principal merit of the scheme was the quickness in which it would be possible to reclaim that 25,000 h.p.

THE CHAIRMAN: Might it be done for four or five hundred thousand dollars? A-- No, I would not have said that; I wouldn't imagine you could have got it for less than \$50 per horse power, that would be about \$1,200,000?

A-- Something over a million dollars.

Q-- It was much smaller? A-- Yes.

Q-- What was it? A-- Simply involved the placing of a wood stave pipe line in place. It had not got to the stage of computing the exact amount of pipe, or the diameter. It hadn't got to the stage where it was a really definite scheme.

Q-- You spoke of a decision having been arrived at to install additional power? A-- Yes.

Q-- By whom would that decision be made? A-- It would be made by the Commission and the Executive office.

Q-- Do you know when it was made? A-- I couldn't specify the dates, no. I know it was made in such a way that it was not necessary for me to go into any particular specific detail in the matter of the original conception I had of the enlargement.

Q-- You made your estimates then, having decided to change the plan, and install the two additional units, you made your estimates for that work? A-- Yes.

Q-- Can you tell me, Mr. Acres, why you did not include in that estimate, anything for administration and interest during construction? A-- As far as I remember now, I think the \$102,000 was intended to cover unmentioned items, anything beyond the specific items.

Q-- At that time you thought that would cover anything beyond the unit costs. A-- Yes, the circumstances under which the estimate was made necessitated this. As that



summary says this decision to buy the second hand wheels was made very suddenly and completely altered my whole proposed line of thought with regard to that extension, and the urgency of the requirement was such that there was no chance to study the scheme as a scheme of that kind would be studied under ordinary circumstances. The whole scheme was handled in the reverse order to that which the power development was at first intended to be handled. In other words when the construction department started to work there was only one plan in existence, that was a profile covering the gradient of the pipe line, giving the construction department an idea of the depth of the drainage they were to dig. We had no data whatever with regard to the material we were going to use. We did not know to what extent our operations were going to be impeded by either natural or artificial obstacles. We had to use what information happened to be in the engineer's files in the old Ontario Power Company.

Q-- Is this a fair statement of the situation, that in view of the power requirements at that time, and with such general knowledge as you had the Commission decided to make the extension, and you went ahead to make it at whatever the thing would cost to put in?

A-- It was a necessary job and we made, at that time, what we considered a fair estimate in so far as it was within our power to guess where we hadn't the information to make closer computations. The same condition applies to the steel work; we had to buy the steel before we had the steel connections designed. Our contract price was on the basis of price per ton, and on the understanding it would be a minimum basis. Any amount ordered above that price would be the same. The plans for the surge tank were not out for four or five months after it was started. We had to reverse our operations completely and instead of making the general



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layout and working the details up, we worked the details up first and worked the general layout from the details after they had been worked; it requires pretty expert engineering to do that. It had to be done that way to meet the urgent demand for power that obtained in the spring of 1918 which I think was the most critical period of the whole war.

Q-- Did you get the steel? A-- Yes, the only place we could get steel, the steel we wanted, was from a small rolling mill in Youngstown; that steel was rolled from rejected ingots, ingots that were rejected from the war department and for that reason we had to put in heavier metal to allow for imperfections and lack of high gradient.

Q-- You had to get priority orders? A-- Yes, we had to work through the war purchasing department at Ottawa and at Washington, and we had quite a fight on on account of not ordering steel from Canada. They made quite a protest because we did not order the steel from Nova Scotia. The fact is that the Nova Scotia mill could not roll an ingot any larger than 1400 pounds, and it would have looked like a postage stamp if we had used that.

COMMISSIONER R. A. ROSS: You were exceedingly lucky to get the material you wanted anywhere at any price?

A-- The only reason we got the price was the Pittsburg sales agent was lucky enough to know this place at this particular point; it was just by the grace of God we were able to get the plate and it was only because of the mere fact that the Youngstown Rolling Mill had a large quantity of rejected ingots on hand.

HON. MR. ROWELL: Will you please tell us the conditions under which the work was carried on; Mr. Gaby has explained and he says you met with difficulties in reference to labour which substantially increased the cost above your estimate.

A-- One thing that occurs to me is this, that the Queenston



job and the Ontario Power Company work re-act on each other very unfavourably. You see we were just beginning to experience the stringency of the labour question on the Niagara work, and at this time we had to start work on the Ontario Power Company, using about 900 men, and at that time it was our hope that when the Ontario Power Company work was finished, that we would be able to get the services of all, or most of these 900 men on the Queenston job, and we were looking forward to that with a great deal of hope. I do not think we got ten of them. They went to jobs in Toronto, Hamilton and St. Catharines, where they got anywhere from 60 to 70 cents on hourly rates. Another indication of unforeseen conditions was this, that occasionally on the power house site when the wind was in the proper direction, the spray from the Canadian Falls would blow over the work. The workmen at that time told us unless we gave them an extra ten cents an hour they would not work in the spray. We had to pay the men a dollar a day on account of that. Very often without the spray blowing they would not go to work at all.

THE CHAIRMAN: I thought you were going to say they would not work unless you stopped the spray.

A-- They did not object to the spray they got from the brewery on the other side of the river.

Q-- You could have given them some of the rubber suits you had? A-- They all worked in rubber suits. These were two conditions that might be mentioned as cases in point of what we had to contend against, and the other outstanding condition was the general morale that was developing in labour, and was beginning to show itself. I do not think it showed itself in its full force until the spring of 1919, when the Niagara District Trade Federation was formed, and then the real trouble began.







HON. MR. ROWELL: When did you finish the excavation for the pipe line? A-- I couldn't tell that.

Q-- Approximately? A-- Mr. Trimble can give more definite information than I can. It was sometime in the fall of 1919.

Q-- Is there anything else in connection with any increase in cost due to any conditions you think you should state, Mr. Acres?

A-- I might possibly explain that question of the unforeseen condition we met with on the wood stave pipe.

Q-- Yes. A-- My original conception of the scheme, what is mentioned in the memorandum was what is called a contour pipe. It follows approximately the natural surface of the earth, making such curves as is necessary to follow a certain grade elevation. When the decision was made to put in the two new large turbines that matter of a contour location for the pipe had to be abandoned altogether, and the only thing then to do was to consider the question of the conduit from two standpoints, that is the maximum size and maximum speed of delivery and construction, and that limited the construction to the wood stave pipe. As far as size was concerned all we felt justified in putting in was a pipe 13 feet 6 inches in diameter. At the time the pipe was ordered we had not time to study the hydraulics of the pipe at all, and we did not know what gradient would be necessary to lay the pipe in order to get the proper forebay levels in our surge tank. The original scheme did not involve any surge tank. The amount of water that was involved in the final scheme made the surge tank absolutely necessary. In the original the idea of the scheme was to connect the small conduit to the end of No. 2 conduit, and let No. 2 surge tank regulate the new pipe parallel with the old conduit, and that too lead to a situation of more or less fine calculation in hydraulics to determine the



gradient of the pipe in order to get the proper elevation of the forebay to allow the surge tank to advance sufficiently in order to make the riser high enough to accommodate the fluctuations of the level. These were features which could only be more or less guessed at when the estimate was made, and had to be revised while the work was in progress. The plans covering that were only issued four to six months after the work was underway, and the large increase in the diameter of the pipe had a very large effect on its stability, and the original plan was ignoring back-fill. That question was not given very serious consideration until we began to study the hydraulic and found the pipe was not inherently stable. We considered the requirement was quite reasonable when we began to take out the rock and earth, as it was a very unsatisfactory proposition, and we could not very reasonably refuse to do what the Park Board asked us to do in changing the layout to take care of the back fill. It was very unsightly, and we discovered this pipe was not stable enough to stand the back-fill. The final decision forced upon us was to uncase the pipe. It had to be done and we restored the surface of the Park over the pipe. That was a condition that arose from the fact that it was not possible to give the scheme consideration in the proper sequence, which a scheme of that kind always gets under normal conditions. That was one important feature entering into excess cost. Another thing we had no time to make borings or do any core drilling on the power house site. We did not know how much of the material was solid rock; we were not sure there was solid rock, although we thought there was because one portion of the old Ontario Power Company power house is not on solid rock, and the same applied to tunnel excavation. Fortunately we erred on the right side there. We thought from the knowledge we had, and reports we had on the





penstock tunnels that the rock would be very shaly, and there would be a considerable amount which we would have to shift. As it happened we did not have to do anything of that kind, as we were able to take it out very close to the lines. That largely accounts for the lower cost in the penstock tunnel, as compared with the estimate cost.

Q-- Is there anything further?

A-- I can't think of anything, sir.

THE CHAIRMAN: Did you make estimates for the hydraulic? A-- Yes.

Q-- They were sent on to the Commission?

A-- Yes, sir, as far as I was able to.

Q-- Did you know when you made them about what excavation you would have to do?

A-- No.

Q-- To what extent did you provide for excavation?

A-- On the pipe line there was 150,000 yards of mixed earth and rock at an average price of 70 cents a yard.

HON. MR. ROWELL: What did you base the seventy cents on, Mr. Acres? A-- It was more or less an estimate based on judgment Mr. Rowell. Having in view the condition under which the work would have to be done, and having in view as nearly as we could the relative proportions of earth and rock to be involved, and the amount of material --

Q-- What did you consider the relative proportions of earth and rock were?

A-- I couldn't remember that off hand. I know we considered the major proportion was earth. Another condition was, we found considerable leakage from the conduit lines, and we found we had to work in very wet bottom, behind the Toronto Power Company and Canadian Niagara Company



Q-- Did that contribute to the necessity of drains?

A-- Yes, that was almost entirely the cause for the necessity of draining the penstock line.

THE CHAIRMAN: Was the location of the line as finally laid down, the same as you had originally laid down? A-- Yes, just about, it was laid parallel to the other.

HON. MR. ROWELL: Does the explanation you have given us about the stove pipe in connection with its passage through the park explain fully the items that were not included in your original estimates, the explanation you have already given us about the requirements about the back-fill, top dressing, and concrete through the park, does that cover the items applicable to the pipe line which were not included in your original estimate?

A-- I would not say that it included all of them, Mr. Rowell; they were important ~~question~~ items.

Q-- Is there anything else that occurs to you?

A-- No, I think not, I cannot think of anything offhand. Mr. Gaby mentioned the fact that the lowering of the power house floor, ten feet, was an item that entered into the uncertainty <sup>of</sup> the original computation. That was a decision we made after we came to the designing of the plant.

COMMISSIONER HANEY: I think Mr. Gaby said 12 feet, it was 10 feet? A-- I think it was 10 feet. The old plant discharged water over a weir; we eliminated the weir, and discharged the water into the natural river level and got an extra ten feet of level in that way.

HON. MR. ROWELL: Your estimate of the power house substructure was \$124,000, the actual cost was \$392,000. Mr. Gaby has told us that the increase was due to two causes, one increase in quantities, and the other increase in doing the cost of the work?





A-- Yes, increase in quantity was simply due to lack of data.

Q-- I beg your pardon? A-- The increase in quantity was simply due to lack of data. If we had been able to core drill it would have been a different story altogether.

Q-- Then the power house super-structure, your estimate was \$100,000, and the cost is \$117,000. Mr. Gaby told us that was a mistake? Is that a matter that came under your supervision? A-- No, sir.

COMMISSIONER J. A. ROSS: I want to ask Mr. Gaby a question about the generators and electrical equipment. I see your estimated figure is \$536,000, and when you come to buy them, there were two of them, they cost you \$593,000, or an increase of \$57,000. I was wondering whether, when you made the estimate you couldn't have bought on the market.

MR. GABY: No, I don't think we could. We had not all the specifications, and they were not available and we prepared our estimates to enable us to buy the equipment at the time. We had to get specifications and details as far as the turbines were concerned. The development necessitated the lowering of the turbine to get the additional ten or twelve feet in, and that would make a little difference as far as generating is concerned.

COMMISSIONER J. A. ROSS: The market jumped ten per cent, but you did not wait?

A-- It was a matter of specifications.

THE CHAIRMAN: These were second hand? A-- The turbines were, the generators, were not.

Q-- You knew before you started that you could get these second hand? A-- Yes, we got the information.

Q-- You could get these and you changed your scheme, that was one of the reasons? A-- Yes, one of the important reasons.

Q-- You would have to know what revolutions of the wheels



you could purchase in the market were before you could purchase generators? A-- Yes.

Q-- Due to the characteristics of the wheels you might buy? A-- Yes, sir.

HON. MR. ROWELL: Is there anything further, Mr. Gaby, you think we should have on this?

MR. GABY: There is nothing I know of at the moment. Anything you ask me for, I will get as soon as possible.

Q-- There is nothing Mr. Herron can add?

A-- Nothing except he was practically in charge of the work. I think Mr. Acres has covered it in a general way. He was right on the job on the actual construction all the time.

Q-- If there is anything he would like to say to us?

A-- I think the conditions are pretty well known?

Q-- Pretty well covered by yourself and Mr. Acres?

A-- There are a few details he could probably give.

HON. MR. ROWELL: That is all on this matter unless, and until Mr. Gaby gets the report which he has not been able to look at yet.

MR. GABY: There is one thing Mr. Trimble wanted to bring up.

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A. V. TRIMBLE : Sworn - Examined by HON. MR. ROWELL

Q-- Just tell us what your position with the hydro is?

A-- Constructional engineer for the Commission.

Q-- And tell us what your duties were in connection with this particular work. A-- I better tell you Mr. Rowell that the construction department was formed in the latter part of 1917, and the first reason was to build the Ontario Power Company, and we already had a construction department in the Niagara development, which was not termed the construction





department, but the Niagara development construction department, and the department I had charge of was formed in 1917 to take care of all construction outside of the Niagara department to take care of installation, building, and power house work.

Q-- It was formed with this particular work in view? A-- That happened to be the first work we had.

Q-- You were in charge of this work on the ground during the actual work of construction? A-- I was the executive in charge at the head office and visited the job very frequently.

Q-- Your office was here in the main office in Toronto?

A-- Yes.

Q-- Who was the engineer in charge on the ground?

A-- Mr. McGraw, he was superintendent.

Q-- What points are there in connection with this that you can give us information about?

A-- I think Mr. Gaby and Mr. Acres have covered the ground very well with the exception of the effect upon the men that the presence of the militia and police had. The whole works was surrounded by barbed wire entanglements; we had the militia patrolling the works day and night; we had our own police who were there for our own protection, and partly at the request of the militia. Every man had to have his photograph taken before he could enter the job, and have an identification card which he had to show when he went on the job. This diminished the morale of the men very considerably. We did not have that condition when we started, but it was probably not more than a month or two after, we had it. We immediately saw the diminished efficiency of the men. Another thing was we had considerable difficulty in getting men to come there and work on account of this condition. I could easily say that we would have thirty per cent of every gang we brought from Montreal, or whatever vicinity we brought our



men from would turn back as soon as they found they had to have their pictures taken -- possibly some had reasons. Another thing was that gangs brought in like that, from Montreal, sometimes would quit, the whole gang, and we would never see them again. We brought in 28 men from Montreal, and they went up to the works and gave in their names and were to be back next morning, and have their pictures taken and start to work. We saw no more of them, but we found they were working in a factory near by, and locked in that factory. These were conditions we had all the time.

Q-- Did these conditions apply after the armistice or before? A-- They applied through about three-quarters of the main part of the job.

Q-- I was under the impression that shortly after the armistice conditions changed; there was a general view then that there would be a slump in demand, and we probably would be faced with unemployment and labour conditions became easier?

A-- As a matter of fact they became worse.

Q-- At that time the general view? A-- Yes.

Q-- Among working men too? A-- Yes.

Q-- Did the conditions actually ease up on the work after the armistice, between that date and its completion, labour conditions? A-- No, they didn't on account of the formation of the Niagara Federation of Labour. We had very little trouble with the labour unions until about the middle 1918.

Q-- About the middle of 1918? A-- Yes.

Q-- Then was that the date of the formation of this union?

A-- I don't remember just when that was formed? It was thereabouts, the spring of 1919. The men were becoming very restless around about the middle of 1918.

Q-- Is there anything further Mr. Trimble, you think would throw light on this matter, if so we would be glad to hear it?





A-- Mr. Acres mentioned the trouble we had with the spray below the bank, and the fact we had to pay these men ten cents an hour more. We had the same trouble over probably 30 to 40 per cent of the pipe line, trouble with the spray, and especially in the winter time the roads were terrible, delivery of material was terrible; the spray would come up and it would freeze at nights, and freeze up, and the roads would become almost impassable; at times they were.

Q-- That would be the winter after the war was over?

A-- That would apply during the winter of 1918 and 19.

Q-- Anything else, Mr. Trimble?

A-- I don't think there is anything else.

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(Proceedings stand adjourned at 2.55 p.m., April 5th, 1923, sine die.)

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